CROCS BITES BACK • THE HIDDEN TRILLION-DOLLAR TAX

AUGUST 17 • 2015 EDITION

Forbes

AMERICA'S TOP 200 COLLEGES

BEST VALUES

FINANCIAL GRADES

MOST GRATEFUL ALUMS

ENTREPRENEUR FACTORIES

PLUS: A NEW #1

SLACK COFOUNDER **STEWART BUTTERFIELD**

THE PHILOSOPHY MAJOR WITH THE $3 BILLION STARTUP

THE NEW GOLDEN TICKET

YOU DON'T HAVE TO CODE TO GET RICH.

HOW LIBERAL ARTS GRADS ARE CONQUERING SILICON VALLEY.

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VOLUME 196 NUMBER 2

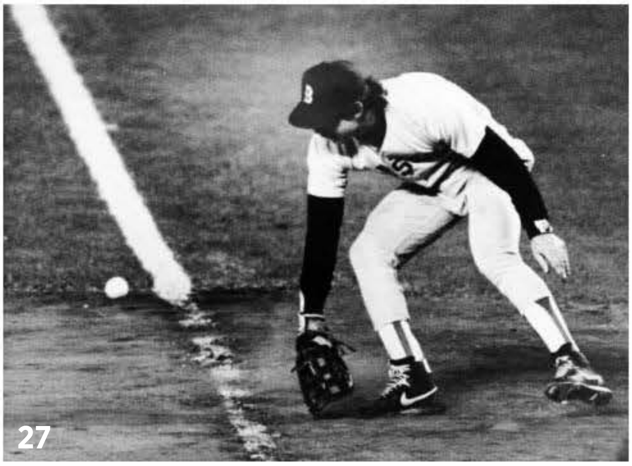
Photographed for FORBES by Carlo Ricci on location in Vancouver. Stewart Butterfield wears a Z Zegna jacket, shirt by Etro, jeans by AG and shoes by Vince.

Forbes

ON THE COVER

On the cover: Photographed for Forbes by Carlo Ricci on location in Vancouver. Stewart Butterfield wears a Canali suit, shirt by National Standards, tie by Eton and belt by Anderson's.

STYLED BY STEVEN SCHELLING FOR THEY REPRESENTATION WITH JOSEPH DEACETIS FOR FORBES. GROOMED BY SONIA LEAL-SERAFIM FOR THEY REPRESENTATION.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INSIDE SCOOP

Charting a Bold Mobile Future

BY LEWIS D'VORKIN

I HAVE THIS technology artifact near my desk. It was called the AOL Mobile Communicator, a small blue plastic device for instant messaging and e-mail. AOLers, as we called ourselves in the '00s, played with them incessantly. For a time I tried unsuccessfully to ban their use during meetings. AOL's millions of members had little need for them, so the handheld unit withered away. As FORBES goes about the business of product development, the communicator remains my daily reminder to avoid chasing bright, shiny objects.

Five years ago I kept that relic in my direct line of sight as the iPad craze engulfed the media industry. Nearly every news company tried to win the favor of Steve Jobs by releasing costly apps. They hoped to build the digital businesses that had escaped them in the Web 1.0 world. More often than not, hundreds of thousands of app downloads produced only tens of thousands of regular users. FORBES decided not to rush in like the others.

Fast-forward to 2015—and where we're headed with apps. I recently counted 94 apps on my iPhone 6. I probably use only 6 or 7 every day, mainly utilities (calendars, maps, weather) that help me live my life. I don't regularly use any single-source news app, though I do use aggregation apps. In a new report, the Reuters Institute for the Study of Journalism surveyed consumers in 12 countries and found that they download only an average 1.5 news apps onto their phones.

Given these and other usage patterns, FORBES plans to chart its own course for apps. Last week we released a beta version of an app for our Under 30 list members, the first in a series of vertical apps for passionate communities. It will be officially launched at our Under 30 summit in Philadelphia in October. It's a kind of social network with activity feeds, member directories, messaging, notifications—and very limited FORBES content. Content from the app will be used on an Under 30 channel on Forbes.com. Our apps will offer marketing partners targeted opportunities while the Web channels provide related audiences at scale.

I plan to keep my AOL Mobile Communicator close by as our mobile strategies for apps and the Web unfold. There are still lots of bright, shiny objects to avoid.

WHY THE IRAN DEAL IS SO DEADLY

BY STEVE FORBES, EDITOR-IN-CHIEF

This sobering interview with Israeli Prime Minister Benjamin Netanyahu was conducted in Israel recently on condition that it be embargoed until formal announcement of the Iran nuclear deal. It covers Iran's ominous nuclear program, the now announced agreement and other critical security issues. Make no mistake: The very safety of the U.S. itself is at stake.

STEVE FORBES: Prime Minister, President Obama has said that if there isn't a deal with Iran it will mean war. What we've learned about the deal is not reassuring. What's your take on this?
BENJAMIN NETANYAHU: I think if the deal goes through we're in danger of war, and it might be the worst kind of war we can imagine. Because this deal will open the way for Iran not to get *a* bomb but many bombs. Within a decade it will be free to enrich uranium on an unlimited basis. And it will be able to make the fissile core for dozens of bombs—indeed, hundreds of bombs—which it can then put on the hundreds of ICBMs it already has.

Under this deal Iran is going to get $100 billion to $300 billion, which it will be able to use to fund its terrorism and its aggression in the region—its aim being to destroy Israel. Given Iran's history of aggression, I'd say that this double bonanza of a guaranteed pathway to a nuclear arsenal and a jackpot of money to continue its aggression actually makes the danger of war—even nuclear war—a lot greater.
SF: You make a very important point. Even if Iran sticks to the deal, which is highly problematical, in a decade it will be a major global nuclear power, and it will have ballistic missiles.
BN: Iran is producing them, and guess what: Within a few years they will be able to reach the Eastern seaboard of the United States. And then every point in the United States. But this deal will also enable Iran to tip those missiles with nuclear weapons, with atomic bombs. And I think it's a huge mistake to allow the foremost sponsor of terrorism in the world, Iran, to have nuclear weapons, as well as the capacity to give such weapons to its terrorist surrogates. This is a big, big mistake—not only endangering Israel and the entire Middle East but the entire world, and specifically the U.S. The mullahs, the dictators in Tehran, they call us the little Satan; they call America the big Satan. You are their ultimate target, and you should not give such a terrorist regime the weapons of mass destruction. I think the greatest danger facing our world is the marriage of militant Islam with nuclear weapons, and here you have a militant Islamic state, Iran, arming itself with nuclear weapons and receiving a huge cash bonanza in the bargain. That's a mistake.
SF: The prospect of Iran becoming a nuclear power is going to set off a nuclear arms race in this part of the world, is it not?
BN: It is. The greatest danger in this deal is not that Iran will violate the agreement. That's a danger—and probably a certainty, given its record of cheating. The fact is that within ten years Iran won't have to violate anything; it can just walk into the bombs—into many bombs. The Iranians are openly saying that they won't have the 6,000 centrifuges they're allowed under this deal, they can have 190,000 centrifuges. Which is a vast amount.

They'll be able to take yellowcake, put it into those centrifuges, spin it and make the material needed for nuclear bombs within weeks—and on a vast scale—and they don't have to violate the agreement. They merely have to keep it to get a nuclear arsenal. And that's why countries in the region—Iran's Arab neighbors and others—are saying, "Well, if Iran is going to be given a license to produce an atomic bomb arsenal, then we have to do that, too." So this deal will spark a nuclear arms race in the Middle East tinderbox.

And, you know, this could be the deal that will be the ultimate nuclear proliferator, that more than anything

else in history will cause the proliferation of nuclear weapons. That's bad news for everyone.

SF: Iran clearly wants to become the dominant power in the Middle East. We see its proxies operating everywhere. Iran seems, ultimately, to have its eyes on Saudi Arabia's oil, not to mention Iraq's.

BN: And the holy places.

SF: And the holy places. Putting aside the nuclear issue, how do we counter Iran's ambitions in the region, which have global implications?

BN: Don't give Iran the $100 billion to $300 billion to fund its proxies and its own arms industry—its rockets, its drones and its submarines. Why give the most dangerous regime on Earth the power to further its aggression? This is a big, big mistake. So, the first thing is: Don't give Iran the funds to multiply its aggression 10 times, 100 times over.

Second, resist Iran and its proxies. Support your allies, support those who are resisting Iran. And the principal ally, the *best* ally, that the U.S. has in this region is Israel. I think that America has no better friend than Israel, and Israel has no better friend than America. We should stand together against Iranian aggression and against ISIS' aggression. Both of them are our enemies. You shouldn't strengthen one and weaken the other; you should weaken both.

SF: What happens if Congress doesn't derail this deal?

BN: We always have the right and the duty to protect ourselves against a regime that, while denying the Holocaust, is planning another Holocaust against the 6 million Jews of Israel. That will not happen. We won't let it happen.

SF: Is this like the 1930s?

BN: No, it's worse, because we have the example of the 1930s, which wasn't available then.

Ugh! More Taxes

Uh-oh! Washington is coming down with another tax-and-spend fever. The cause this time is an old-timer: highway spending. The prospect of ladling out more money for roads even has many Republicans acting like dogs in heat.

The Highway Trust Fund—from which come most of the outlays for our transportation programs—is broke. The fund is 90% financed by federal gasoline and diesel taxes, now 18.4 cents and 24.4 cents per gallon, respectively, and the revenue generated isn't enough to cover the existing projects.

What to do? In Washington the answer is almost always more taxes. Earlier this year our political class was seized with the idea of boosting the gasoline tax. After all, the price of oil had plunged and with it the cost of fuel at the pump. Under such wonderful circumstances motorists would hardly notice a hike in the gas levy. Grassroots outrage quickly put the kibosh on that idea.

Now Washington politicians are salivating at another source of manna: how our multinational firms are taxed. The U.S. is one of the few countries that taxes the profits its businesses earn overseas. Our multinational companies pay tax not only to a foreign government but also to Uncle Sam, when they repatriate those earnings. No wonder U.S.-based companies have some $2 trillion in cash parked abroad.

Levying a one-time tax on those profits sitting offshore to shore up the Highway Trust Fund has widespread support. However, this maneuver may well become part of a broader overhaul. For instance, one idea is to have a permanent tax on overseas earnings, whether they're brought home or not. The rate, though, would be far lower than the current 35% levied on domestic and repatriated profits.

Nevertheless, the bottom line here is inescapable: The result of all this would be a net tax increase.

Any substantive change in business taxes should wait until Obama leaves office, when such an effort would be part of a comprehensive overhaul of the federal income tax code or its elimination altogether to institute a flat tax.

As for the empty Highway Trust Fund, two things. In the short-term, just pump in general appropriations. Then return the fund to its original 1950s purpose: to build and maintain the federal Interstate Highway System. Period. Today the fund is hit up for mass-transit programs, bike paths and Lord knows what else. If used only as originally intended, the fund would be virtually solvent. As for the other stuff, let the components be considered as separate bills to be approved and financed via the normal legislative process. F

Restaurants: Go, Consider, Stop

Edible enlightenment from our eatery experts and colleagues Richard Nalley, Monie Begley and Randall Lane, as well as brothers Bob, Kip and Tim.

● Members Dining Room

The Metropolitan Museum of Art, 1000 Fifth Ave., at 82nd St. (Tel.: 212-570-3975)

This treasure among thousands is on the fourth floor, overlooking breathtaking views of Central Park. A seasonal standard menu is offered, but for a unique experience, try the four-course tasting menu. Its delicious selections pay tribute to one of the museum's new collections. (One member of the party must be a museum member; ask for details when making your reservation.)

● Juniper Bar

237 West 35th St. (Tel.: 212-967-2511)

The place is new, but be warned that the service is as slow and uncoordinated as the colors and patterns of the dining area's décor. The cheesesteak spring roll is more rock than roll, and the crab cake sliders are beyond bland. The beet salad and the shrimp sliders are better choices, and the truffle fries are the highlight of the meal. Be prepared for a long wait before desserts arrive, and skip the red velvet cake—it's dry.

● Park Avenue Summer

360 Park Avenue South, at 26th St. (Tel.: 212-951-7111)

This restaurant and its dramatic three-month seasonal change of menu and décor has moved to the Flatiron District. The bar buzzes, and each of the dining rooms has a sense of intimacy. Tops: succulent baby-back ribs, skirt steak paired with a salad and thin onion rings; grilled halibut accompanied by black truffles and a poached egg. Each season has its appropriate sundae. Splurge and share.


When one didn't exist,
Dana-Farber
created a pathway
to treat children with
rare brain cancers.

LeaderBoard

August 17, 2015

"If I have to be the country guy who stands there and takes grenades for everybody else for the betterment of our business," says Jason Aldean, "I can." Business for Aldean, at least—$43.5 million in income in the last 12 months—has never been better. **PAGE 28**

Jason Aldean was photographed by David Yellen for FORBES before his performance in the XFINITY Theatre in Hartford, Conn., May 29, 2015.

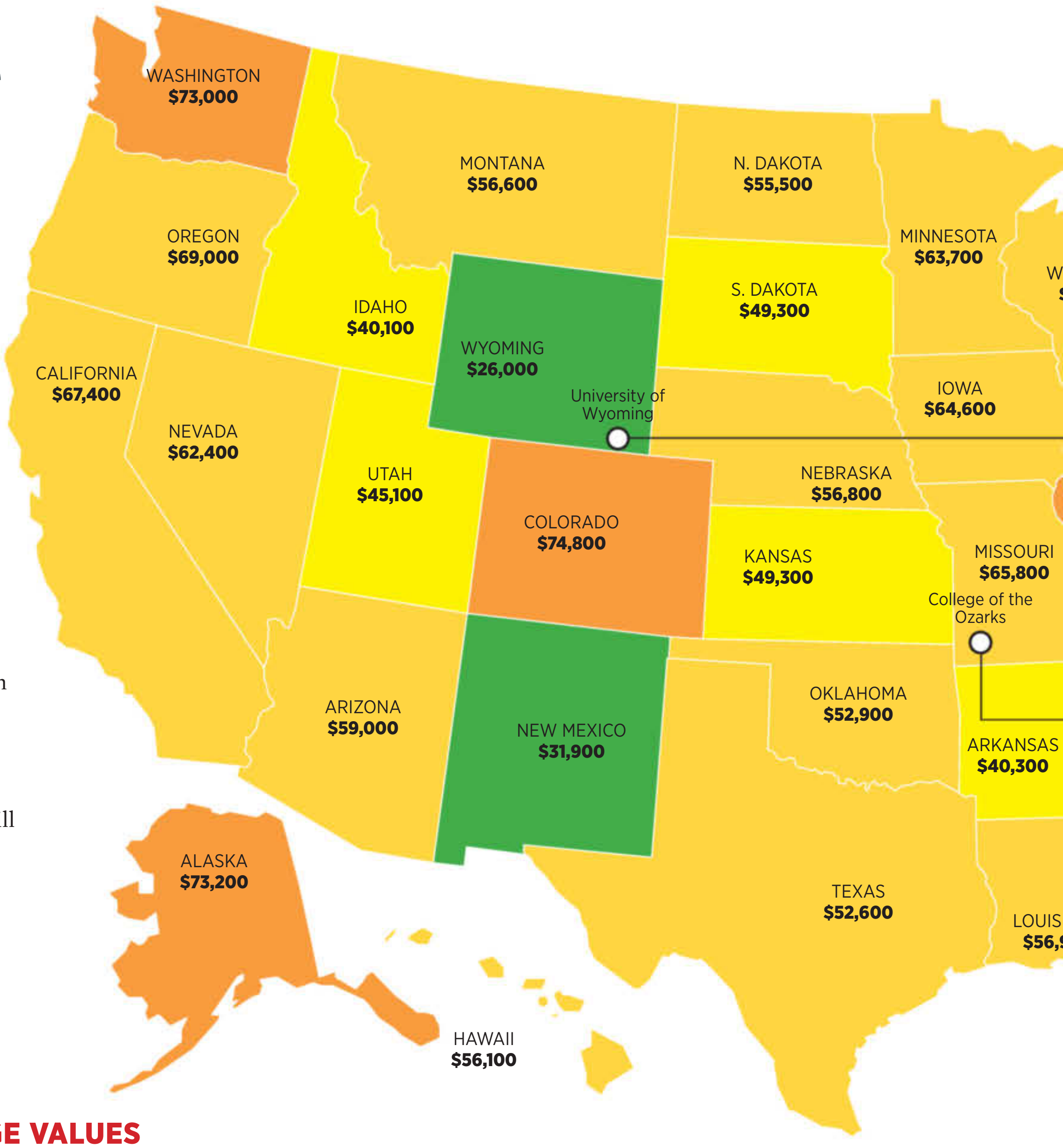
Forbes LeaderBoard

EDUCATION

Best Value Colleges

GONE ARE THE DAYS when a summer lifeguarding gig covered a year of higher education. In the last four decades tuition and fees have risen 270% at public four-year colleges and 204% at their private counterparts; the average college grad now enters the workforce nearly $30,000 in debt.

How much does it really cost to produce a college graduate, though? This map shows how much schools in each state collect in tuition and fees from students per bachelor's degree awarded—in other words, which states are producing college grads on a budget and which are full of schools pulling in big money with meager results. There will be no quiz later, but failure to pay attention might cost you.



THE TOP 50 COLLEGE VALUES

1
U.S. Military Academy
West Point, NY

2
U.S. Naval Academy
Annapolis, MD

3
U.S. Air Force Academy
Colorado Springs, CO

4
College of the Ozarks
Point Lookout, MO

5
Berea College
Berea, KY

6
U.S. Coast Guard Academy
New London, CT

7
U.S. Merchant Marine Academy
Kings Point, NY

8
Brigham Young Univ.
Provo, UT

9
Univ. of Wyoming
Laramie, WY

10
Univ. of Florida
Gainesville, FL

11
Brigham Young Univ., Idaho
Rexburg, ID

12
Univ. of N. Carolina, Chapel Hill
Chapel Hill, NC

13
Florida State Univ.
Tallahassee, FL

14
CUNY, Baruch College
New York, NY

15
New College of Florida
Sarasota, FL

16
San Diego State Univ.
San Diego, CA

17
CUNY, Brooklyn College
New York, NY

18
CUNY, Hunter College
New York, NY

19
Univ. of Maryland, College Park
College Park, MD

20
Utah State Univ.
Logan, UT

21
CUNY, Queens College
New York, NY

22
Univ. of Texas, Austin
Austin, TX

23
Univ. of Wisconsin–Madison
Madison, WI

24
Univ. of Utah
Salt Lake City, UT

25
N. Carolina State Univ., Raleigh
Raleigh, NC

WEST

With the nation's lowest cost per diploma, Wyoming is churning out the most affordable bachelor's degrees. It's no surprise, then, that the Cowboy State's flagship university is one of the country's best buys, ranking No. 9 on FORBES' Best Value list.

MIDWEST

Some 150 years ago, after the Industrial Revolution ushered in a much more complex American economy, the federal government gave states land to start schools focusing on "agriculture and the mechanic arts." Today these "land grant" institutions are still a practical choice—they make up 16 of the 50 Best Value schools on our list.

EAST

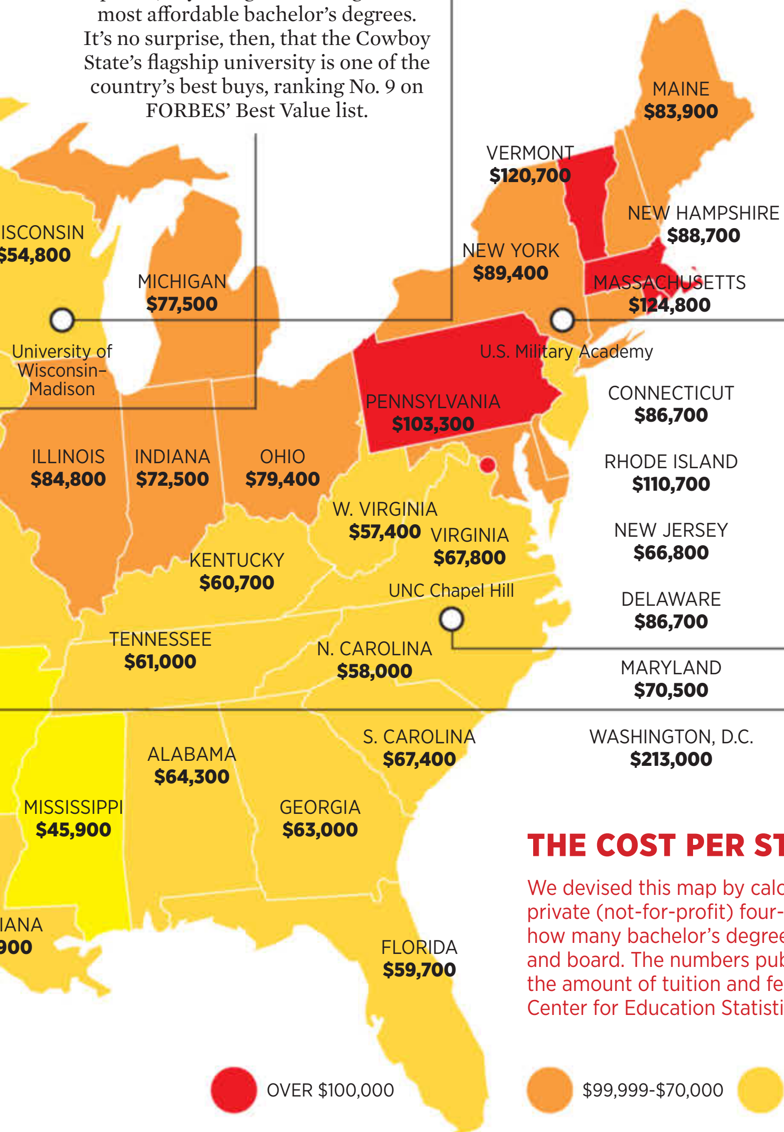
West Point tops our Best Value list for the sixth straight year. Thanks to world-class education and free tuition, books, room and board, all five service academies are in our top ten. Admission is competitive, and students must weigh the benefits against a military commitment upon graduation.

RESEARCH TRIANGLE

R&D dominates the region defined by its 3 major schools, 2 of which are in the top 25 best values. Research Triangle Park is home to labs of major companies, including IBM, GlaxoSmithKline and BASF.

SOUTH

Some schools are as much work as play. At College of the Ozarks—No. 4 on our value list and nicknamed "Hard Work U."—students pay their way by working 15 hours a week on campus. Only seven such "work colleges" exist in the U.S.—another, Kentucky's Berea College, also makes our top five.



THE COST PER STATE

We devised this map by calculating total tuition and fees collected by every state's public and private (not-for-profit) four-year institutions in a single year, then dividing that amount by how many bachelor's degrees the schools awarded in 2013. This figure does not include room and board. The numbers published do not reflect the price schools charge students but rather the amount of tuition and fees schools receive per degree granted. Data are from the National Center for Education Statistics' IPEDS database and are calculated by FORBES.

OVER $100,000 | $99,999-$70,000 | $69,999-$50,000 | $49,999-$40,000 | UNDER $40,000

26
Univ. of Iowa
Iowa City, IA

27
SUNY Binghamton (Binghamton Univ.)
Binghamton, NY

28
Truman State Univ.
Kirksville, MO

29
SUNY Geneseo
Geneseo, NY

30
Iowa State Univ.
Ames, IA

31
SUNY College of Environmental Science & Forestry
Syracuse, NY

32
Univ. of Mississippi
Oxford, MS

33
California Polytechnic State Univ., San Luis Obispo
San Luis Obispo, CA

34
Appalachian State Univ.
Boone, NC

35
Louisiana State Univ.
Baton Rouge, LA

36
Univ. of California, Berkeley
Berkeley, CA

37
Univ. of California, Los Angeles
Los Angeles, CA

38
Indiana Univ., Bloomington
Bloomington, IN

39
Univ. of Virginia
Charlottesville, VA

40
Univ. of Central Florida
Orlando, FL

41
Univ. of S. Florida
Tampa, FL

42
Univ. of Idaho
Moscow, ID

43
Mississippi State Univ.
Starkville, MS

44
Texas A&M Univ., College Station
College Station, TX

45
Univ. of Georgia
Athens, GA

46
Purdue Univ., W. Lafayette
W. Lafayette, IN

47
Oklahoma State Univ.
Stillwater, OK

48
Univ. of Nebraska, Lincoln
Lincoln, NE

49
Georgia Inst. of Technology
Atlanta, GA

50
Univ. of Montana
Missoula, MT

BY CHASE PETERSON-WITHORN

LeaderBoard

PHIL KNIGHT
–CHAIRMANSHIP

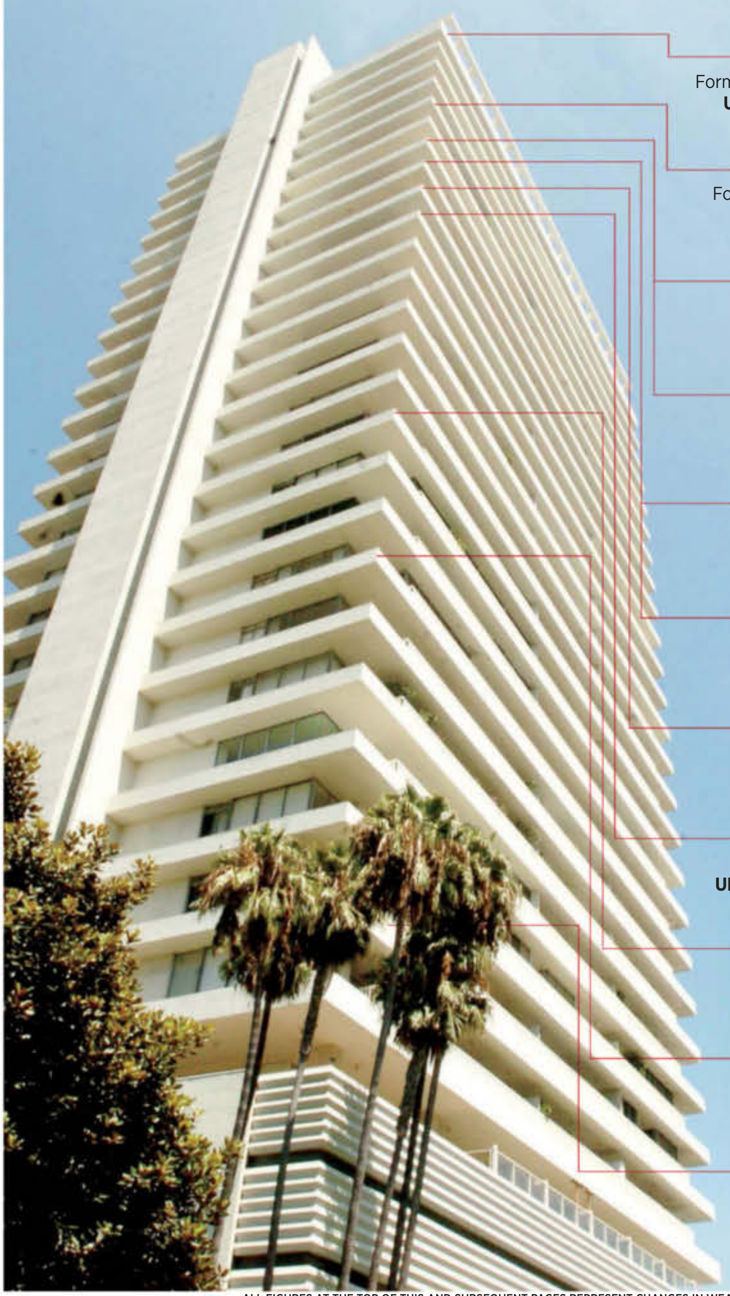
NET WORTH: $25.3 BILLION

Fifty-one years after he started selling Japanese running shoes out of the trunk of his car, Nike's cofounder says he's stepping down as chair.

REAL ESTATE

Treasure of the Sierra

SIERRA TOWERS, a midcentury high-rise in West Hollywood off Sunset Boulevard, has long been a celebrity party spot; past residents include Cher, David Geffen and Sidney Poitier. In recent years, though, it has also lured in billionaires and captains of industry. Why? At 32 stories Sierra offers what no other L.A. high-rise can: protected views of the ocean, mountains and skyline. (West Hollywood now bans building higher than 110 feet, and the adjacent Trousdale Estates are single-family homes.) The staff of 36 provides high-end security and services—and who wouldn't exult at the chance to share an elevator with Joan Collins?



CURRENT RESIDENTS

Evan Metropoulos
Former co-CEO, Pabst Brewing; son of billionaire C. Dean Metropoulos
UNITS: Five condos and one maid's quarters; about 8,821 sq. ft.
PRICE: $31 million total, September 2012–February 2015

Mary Hart and Burt Sugarman
Former *Entertainment Tonight* host and her TV-producer husband
UNIT: 3,321 sq. ft., 2 bed, 2 bath
PRICE: $8 million, January 2015

Lloyd Cotsen
Former CEO and chairman of Neutrogena
UNIT: Two units totaling 3,905 sq. ft., 4 bed, 4 bath
PRICE: $3.295 million total, October 1999–June 2007

Alec Gores
Private equity executive
UNIT: 1,237 sq. ft., 1 bed, 2 bath
PRICE: $542,005, July 2003

Joan Collins
Hyperglossy ex-*Dynasty* actress
UNIT: 2,117 sq. ft., 3 bed, 3 bath
PRICE: $2.7 million, December 2007

Courteney Cox
Former *Friends* star
UNIT: Two units totaling 3,143 sq. ft., 3 bed, 5 bath
PRICE: $4.55 million total, September 2011–September 2014

Jim Pohlad
Minnesota Twins owner
UNIT: 1,672 sq. ft., 2 bed, 3 bath
PRICE: $3.35 million, March 2013

Nicolas Berggruen
Investor and philanthropist
UNITS: Nine condos and one maid's quarters, about 14,400 sq. ft.
PRICE: $25 million total, August 2012–March 2015

Robert Herjavec
Businessman and *Shark Tank* star
UNIT: 1,672 sq. ft., 2 bed, 3 bath
PRICE: $3.15 million, January 2015

Bruce Makowsky
QVC handbag king
UNIT: 1,672 sq. ft., 2 bed, 3 bath
PRICE: $2.4 million, October 2013

David Bohnett
GeoCities founder; now venture capitalist
UNIT: 2,101 sq. ft., 3 bed, 3 bath
PRICE: $2.61 million, August 2012

BY ERIN CARLYLE AND SUSAN RADLAUER

PHOTOGRAPH BY SPLASH NEWS / NEWSCOM; STEVE CONNER / ICON SPORTSWIRE / NEWSCOM (TOP)

ALL FIGURES AT THE TOP OF THIS AND SUBSEQUENT PAGES REPRESENT CHANGES IN WEALTH BETWEEN JUNE 23 AND JULY 21. *SOURCES: INTERACTIVE DATA VIA FACTSET RESEARCH SYSTEMS; FORBES.*

LeaderBoard

STEFANO PESSINA
+$1.1 BILLION
NET WORTH: $14.4 BILLION
Walgreens' largest shareholder named CEO by board. Shares are up 26% since his predecessor stepped down in December.

NEW BILLIONAIRES

Medicine Man

TWENTY-SEVEN YEARS AGO George Yancopoulos was a scientific superstar, a professor of biology at Columbia at age 28. But his father, a first-generation Greek immigrant, kept complaining about how little academia paid.

So Yancopoulos, now 55, signed on with a nascent Tarrytown, N.Y.-based biotech firm called Regeneron—and has since led the invention of four approved drugs and a technology platform designed to invent more. Shares in Regeneron have increased a startling 2,240% over the past five years, and Yancopoulos' stake has made him a billionaire, the first pharmaceutical research chief ever to hit ten figures. "We were a tiny company, but we had the most powerful technology," he says. "And sometimes that's what counts."

The other keys to his success: the group of scientists who have stuck with him, and, more than anyone, the man who hired him, Regeneron CEO Leonard Schleifer (who is himself worth $1.7 billion). Schleifer lauds Yancopoulos for his "immense talent and genius."

Yancopoulos' fourth drug, Praluent (for lowering cholesterol in people already maxed-out on statins), was approved on July 24. It's expected to be a big seller, but he's not sitting still: Deutsche Bank estimates that his experimental drug for allergic conditions could generate $10 billion in annual sales by 2025.

He still drives an eight-year-old Honda Pilot, does his kids' laundry and dresses in the worn Oxfords and khakis of an academic scientist. He is uncomfortable discussing his wealth but hopes that the very thought of it, generated by lifesaving drugs, might serve "as an inspiration to kids who [might] otherwise become hedge fund managers."

RICHEST BY STATE

Florida

POPULATION:
19.8 MILLION

GROSS STATE PRODUCT:
$769.7 BILLION
(2.7% GROWTH YEAR-ON-YEAR)

GSP PER CAPITA:
$38,690
(RANKS NO. 42 NATIONWIDE)

RICHEST:
MICKY ARISON
$7.9 BILLION
(NO. 62 ON THE FORBES 400)

THINGS FINALLY SEEM to be looking shipshape again for Micky Arison: Last month star guard Dwyane Wade re-signed with the Miami Heat, the NBA franchise Arison owns, taking a substantial pay cut to stay with the team. A bigger reason for Arison to be content, though, is the improving condition of his Carnival Corp. Over the past few years the cruise company made all the wrong kinds of headlines: for its ill-fated *Costa Concordia,* aboard which 32 passengers died when it wrecked off Italy in 2012, and—somewhat less tragically—for its February 2013 "poop cruise," in which a power failure left Carnival's *Triumph* adrift and filth-ridden for days.

Though investors initially pounded Carnival like a tropical storm, its stock has risen 40% in the last 12 months on improved sales and profits: $15.9 billion and $1.2 billion, respectively, in the last fiscal year, up 3% and 15%. Charting that new course required Arison to give up the helm to new CEO Arnold Donald in mid-2013; Arison, whose father founded Carnival in 1972, remains chairman and is the company's largest shareholder.

CHRIS LYONS (RIGHT); UPPA / ZUMAPRESS / NEWSCOM (TOP)
RICHEST BY STATE BY ABRAM BROWN; NEW BILLIONAIRE BY MATTHEW HERPER

LeaderBoard

JACK MA

+NATURE PRESERVE

NET WORTH: $22.9 BILLION

Alibaba boss reportedly pays $23 million for 28,100 acres in the Adirondacks, once part of a nature preserve started by William Rockefeller.

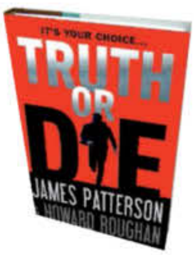
BUSINESS LIBRARY

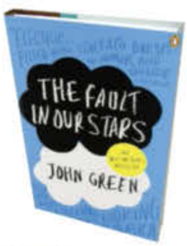
The World's Top-Earning Authors

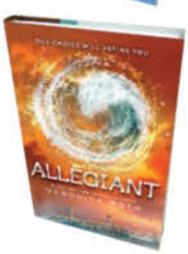
FOR THE WORLD'S richest wordsmiths, putting pen to paper is worth thousands of dollars for a single page. James Patterson remains publishing's highest paid, thanks to his absurd output: 18 books and $89 million over the last 12 months, down just a tick from $90 million a year earlier. (His 12 coauthors enable such superhuman productivity.)

Thirty percent of this year's list made their bones on Young Adult fiction—teen favorites such as Veronica Roth's *Divergent* trilogy (3.9 million copies sold in 2014) and John Green's *The Fault in Our Stars* (3.5 million). Hollywood helped: Roth and Green both saw hit movie adaptations goose their books' sales.

Tops per page: Jeff Kinney, whose *Diary of a Wimpy Kid* books are brief and sell like mad, grossing him $106,000 for each published page, if his earnings are divided by the number of pages in the books he published during our scoring period.







WHAT ARE THEIR WORDS WORTH?

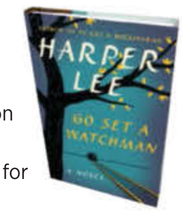
AUTHOR	2015 EARNINGS[1]	$ PER PAGE
JAMES PATTERSON	$89 MIL	$13,000
JOHN GREEN	26 MIL	N/A
VERONICA ROTH	25 MIL	N/A
DANIELLE STEEL	25 MIL	25,000
JEFF KINNEY	23 MIL	106,000
JANET EVANOVICH	21 MIL	33,000
J.K. ROWLING	19 MIL	41,000
STEPHEN KING	19 MIL	22,000
NORA ROBERTS	18 MIL	20,000
JOHN GRISHAM	14 MIL	36,000

[1]Earnings estimates are from June 2014 to June 2015, before taxes and fees. Sales figures are for the U.S. only and provided by Nielsen BookScan.

Go Set A Sales Record

ONE BELOVED AUTHOR missing from this wealthy book club: 89-year-old Harper Lee. Though she earns some $2.5 million in annual royalties from *To Kill a Mockingbird,* our ranking also factors in foreign sales, film rights and money from earlier books. This favors authors with large backlists such as Nora Roberts (214 tomes) and Danielle Steel (111) over Lee, who as of July 14 has now published two novels.

Don't count her out yet, though: Lee's controversial *Go Set a Watchman* looks set to be the biggest book of 2015. It has sold more than 1.1 million copies since its release, making Lee a likely bet for next year's list.



Bizarre Bestsellers

GREAT LITERATURE, Harper Lee aside, has long since departed the bestsellers list; book sales these days are dominated by movie spinoffs, adult coloring books and videogame guides. To wit: The two bestselling handbooks for Minecraft (the game designed by Swedish billionaire Markus Persson) together sold 1.35 million copies in the U.S. in the last year, and Disney's *Frozen: Big Snowman* sold 12,000 more copies than *To Kill a Mockingbird* and *The Great Gatsby* combined. Then there's *Secret Garden,* a coloring book for adults, which has hovered at the top of Amazon's bestseller list, shifting 1.5 million copies since its 2013 publication; its 2015 follow-up has moved some 226,000 copies so far.

Parents, meanwhile, will never stop ringing the Dr. Seuss register: The good doctor sold more than 2.2 million copies from his back catalog between June 2014 and June 2015. Oh, the places he'll go.

BY NATALIE ROBEHMED

GREGG DEGUIRE / GETTY IMAGES; XINHUA / DAI TIANFANG / GETTY IMAGES (TOP)


MileagePlus Club
UNITED
CHASE
D. BARRETT
VISA
Signature
trip to store
trip to Hawaii
GET THERE FASTER WITH
1.5 MILES PER $1 SPENT.

LeaderBoard

MIN KAO
–$180 MILLION
NET WORTH: $2.5 BILLION
Recalculating: GPS pioneer Garmin predicts decreasing revenues and profits, meaning big losses for cofounder Kao.

SEAL THE DEAL

Tumblers to Fall For

IT'S TIME TO TOAST a day when everything has lined up right and a dram or two of whiskey will cap it off. The heavy lifting is behind you, almost—because you want to wrap your paw around a glass with some heft to it, one with the style and pedigree to signal the importance of the occasion.

What you want is a handsomely crafted lowball tumbler (a.k.a. an Old Fashioned glass)—made for clinking in celebration, catching the light and swirling contentedly in your hand. The Old Fashioned glass, named for the venerable whiskey cocktail, might not look all that much like a medieval drinking horn, but you can trace the lineage: The "tumbler" style descends from point-bottomed, 17th-century vessels based on the idea behind the drinking horn—that you couldn't put your libation down without spilling while a precious drop remained therein.

Modern versions are more practical, flat-bottomed and accommodating of large cubes and valuable liquid assets. But these elegant, new-fashioned Old Fashioned tumblers still exude that arm-to-the-sky, hail-fellow-well-met feeling. As you raise your glass, it elevates your drinking, too.

From left: lead crystal Broughton double old-fashioned tumbler by Ralph Lauren ($95); mouth-blown crystal Cluny old-fashioned tumbler by Christofle ($87); crystal Abysse Harcourt tumbler by Baccarat ($330); crystal Adage tumbler by Hermès ($220); crystal Drift Ice double Old Fashioned tumbler by Moser ($145).

30 UNDER 30

Government Workers

Digital democracy from the FORBES 30 Under 30, in 30 words or less.

Jay Finch

18F | 29

Finch recently left the Treasury Department for government-run tech consultancy 18F, which is (perhaps unenviably) tasked with improving the digital operations of the notoriously hidebound federal government.

Azarias Reda

REPUBLICAN NATIONAL COMMITTEE | 29

Recently promoted to chief technology officer of the RNC, Reda is busy building the digital infrastructure to support whoever eventually secures the GOP's presidential nomination.

James Richards

TELEBORDER | 27

Australian-born Richards created cloud platform Teleborder to help companies, mainly tech enterprises, simplify the hiring of skilled foreign workers. The company now has 100 clients, up from 50 in January.

TUMBLERS BY RICHARD NALLEY; 30 UNDER 30 BY KATHRYN DILL
PHOTOGRAPH BY DAVID ARKY FOR FORBES; ILLUSTRATIONS BY PATRICK WELSH FOR FORBES

On the road or in the office, paper and paper-based packaging help us get the job done. And that's just one way they're important to us. Discover how paper and packaging are instrumental to how we work and how we live. **HowLifeUnfolds.com**

Paper & Packaging
How life unfolds:

LeaderBoard

DAVIDSON FAMILY

–$388 MILLION

NET WORTH: $1.3 BILLION

Heirs of glass titan William Davidson (right) to pay Uncle Sam after IRS accuses them of evading estate taxes by collecting millions from him before his death.

AMERICA'S TOP COLLEGES 2015

America's Most Grateful Graduates

RANK	SCHOOL	MEDIAN 10-YEAR GIFT PER STUDENT ($)	AVERAGE 3-YEAR ALUMNI PARTICIPATION	GRATEFUL GRAD INDEX (100 SCALE)
1	PRINCETON UNIVERSITY	$29,330	46%	100
2	DARTMOUTH COLLEGE	27,464	43	99.99
3	WILLIAMS COLLEGE	22,891	52	99.88
4	BOWDOIN COLLEGE	22,121	45	99.83
5	AMHERST COLLEGE	20,866	48	99.67
6	CLAREMONT MCKENNA COLLEGE	23,276	41	99.28
7	DAVIDSON COLLEGE	18,187	48	98.77
8	WELLESLEY COLLEGE	17,451	49	98.23
9	HAVERFORD COLLEGE	15,182	42	94.77
10	UNIVERSITY OF NOTRE DAME	16,840	36	94.28
11	CARLETON COLLEGE	14,876	46	93.98
12	WASHINGTON AND LEE UNIVERSITY	16,255	36	93.45
13	DUKE UNIVERSITY	30,725	28	91.98
14	YALE UNIVERSITY	30,154	28	91.86
15	STANFORD UNIVERSITY	30,826	28	91.76
16	BROWN UNIVERSITY	22,542	28	91.40
17	MASSACHUSETTS INST. OF TECH.	42,136	24	89.60
18	BRYN MAWR COLLEGE	16,272	29	89.52
19	UNIVERSITY OF CHICAGO	20,484	23	88.35
20	SWARTHMORE COLLEGE	13,671	38	87.66

SOURCES: IPEDS DATABASE; THE COUNCIL FOR AID TO EDUCATION; FORBES.

WHICH COLLEGES provide the best return on investment? Colossal resources are expended every year to give prospective students and parents a quantifiable answer. Our annual ranking of America's Top Colleges, which relies on a complex calculation to assess student outcomes, provides one answer, but there is also a simple alternative: the Grateful Graduates Index. The GGI ranks colleges by the median amount of private donations per student over ten years. The idea is that the best schools are those that produce successful alums who make enough to be charitable and feel compelled to give back to their alma maters.

In many ways the private, nonprofit college business model is all about producing the best crop of future donors. To level the playing field for schools that produce lots of grateful grads in low-paying fields like education, academia and government, we also factor in three-year alumni participation (how many grads in total give any amount to their school). Thus Minnesota's Carleton College—with an impressive 46% alumni participation and a median donation of $14,876—ranks No. 11, while Harvard, with a $25,122 median donation, ranks No. 24 because it has many more ungrateful grads; only 18.6% give back annually.

Our rankings, which do not include public institutions, show a number of top schools with a surprising abundance of ingrates: Columbia (No. 28), Carnegie Mellon (No. 51), NYU (No. 101) and Tulane (No. 128) all rank relatively poorly. The GGI for all of the top schools is published in our Top Colleges guide, starting on page 70.

BY MATT SCHIFRIN AND LIYAN CHEN

STEVE NESIUS / AP (TOP)

REED HASTINGS

+$210 MILLION

NET WORTH: $1.5 BILLION

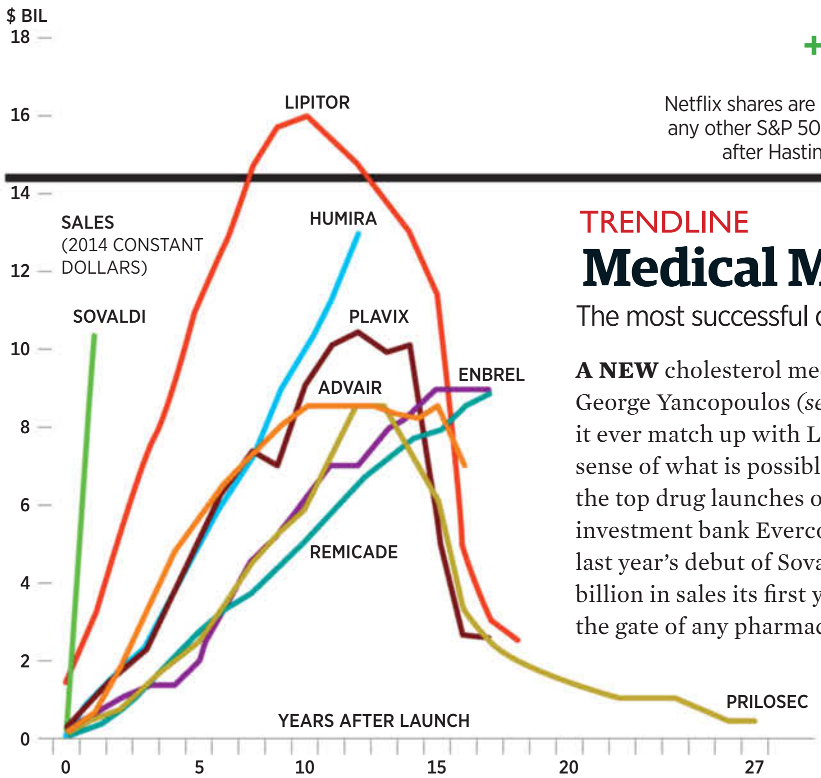
Netflix shares are up 131% this year, more than any other S&P 500 stock. Latest surge comes after Hastings announces a 7-for-1 split.

TRENDLINE

Medical Marvels

The most successful drug launches ever.

A NEW cholesterol medication invented by Regeneron billionaire George Yancopoulos (*see p. 20*) is about to hit the market. But can it ever match up with Lipitor, the bestselling drug ever? For a quick sense of what is possible in the pharmaceutical industry, here are the top drug launches of all time, compiled by pharma analysts at investment bank Evercore ISI and ranked by peak sales. Included is last year's debut of Sovaldi, Gilead's hepatitis C med, which hit $10 billion in sales its first year on the market—the fastest growth out of the gate of any pharmaceutical ever.



SOURCES: EVERCORE ISI; EVALUATE PHARMA; FIRST ORDER ANALYTICS; PUBLIC SOURCES.

MEDICAL MARVELS BY MATTHEW HERPER; BALLS OF SHAME BY MICHAEL SOLOMON

ON THE MARKET

Balls of Shame

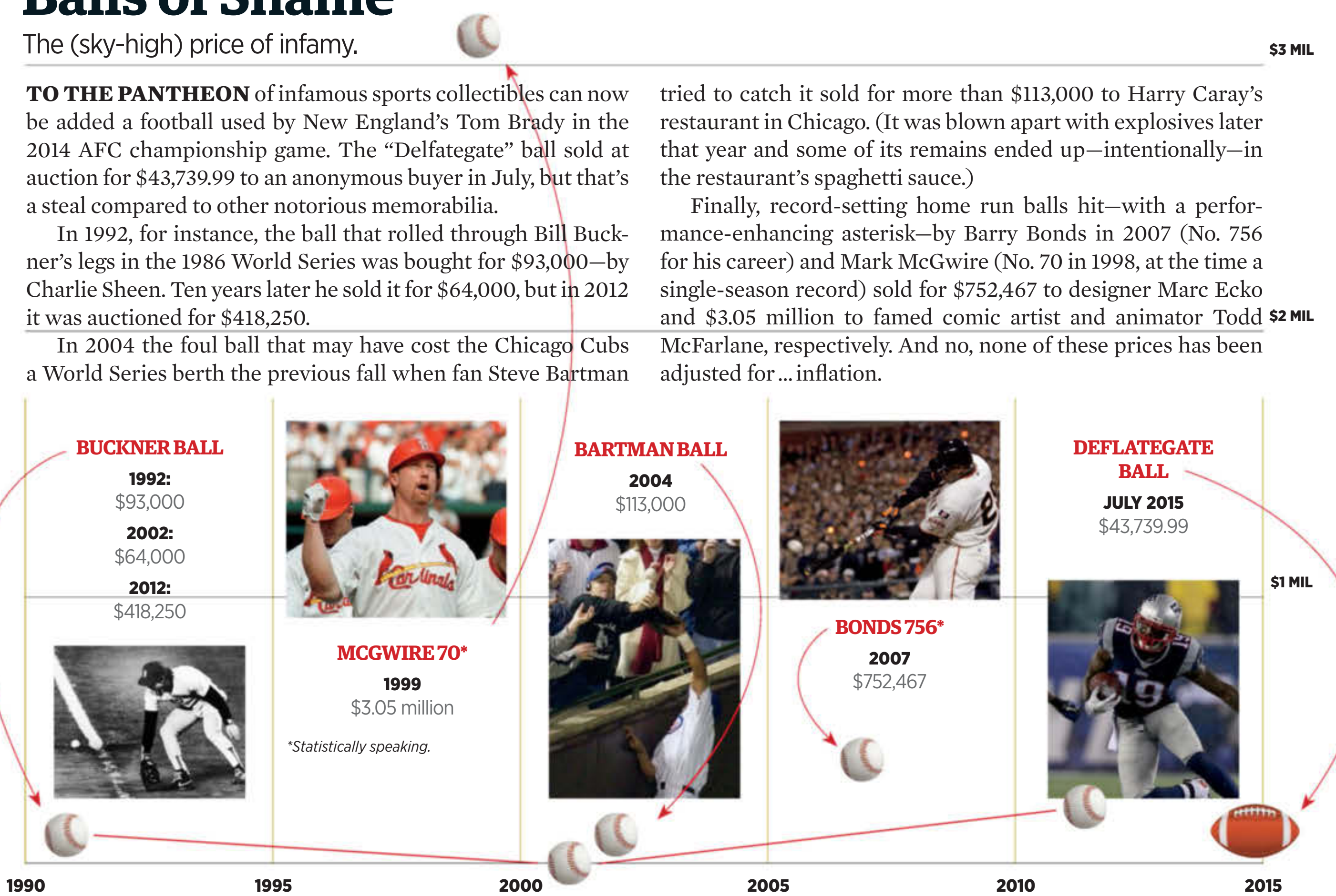
The (sky-high) price of infamy.

TO THE PANTHEON of infamous sports collectibles can now be added a football used by New England's Tom Brady in the 2014 AFC championship game. The "Delfategate" ball sold at auction for $43,739.99 to an anonymous buyer in July, but that's a steal compared to other notorious memorabilia.

In 1992, for instance, the ball that rolled through Bill Buckner's legs in the 1986 World Series was bought for $93,000—by Charlie Sheen. Ten years later he sold it for $64,000, but in 2012 it was auctioned for $418,250.

In 2004 the foul ball that may have cost the Chicago Cubs a World Series berth the previous fall when fan Steve Bartman tried to catch it sold for more than $113,000 to Harry Caray's restaurant in Chicago. (It was blown apart with explosives later that year and some of its remains ended up—intentionally—in the restaurant's spaghetti sauce.)

Finally, record-setting home run balls hit—with a performance-enhancing asterisk—by Barry Bonds in 2007 (No. 756 for his career) and Mark McGwire (No. 70 in 1998, at the time a single-season record) sold for $752,467 to designer Marc Ecko and $3.05 million to famed comic artist and animator Todd McFarlane, respectively. And no, none of these prices has been adjusted for ... inflation.



STAN GROSSFELD / THE BOSTON GLOBE VIA GETTY IMAGES; AP PHOTO / MARY BUTKUS; AP PHOTO / AMY SANCETTA; AP PHOTO / JEFF CHIU; ELSA / GETTY IMAGES; SCOTT EELLS / BLOOMBERG (TOP)

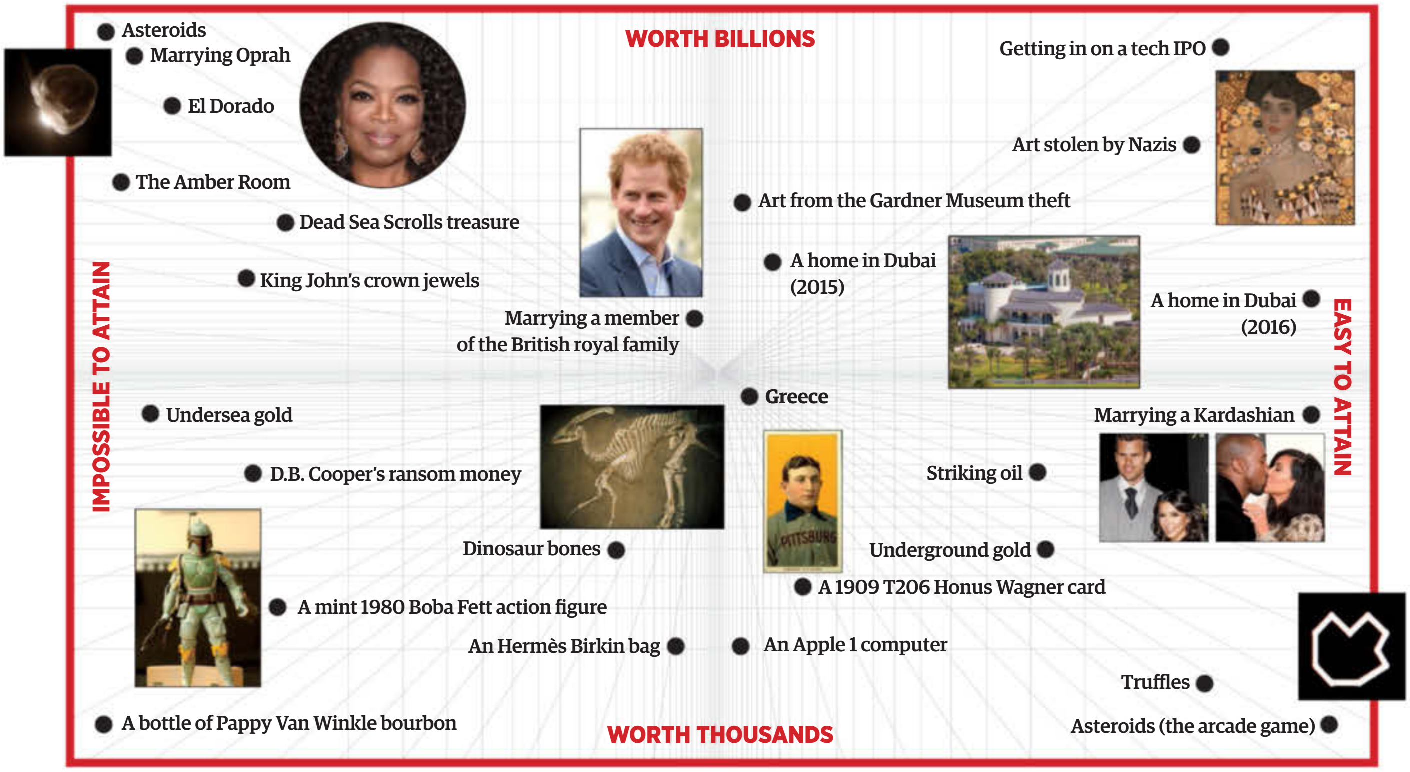
LeaderBoard

MATRIX

A Galaxy of Riches

Is it worth the effort to mine a $5 trillion asteroid and other lost loot?

IN JULY an asteroid named 2011 UW158 had a close call with Earth. Had the half-mile-wide object been 1.5 million miles closer, we'd have been goners. On the other hand, the big fella contains an estimated $5 trillion in platinum, which has would-be space miners dreaming of reaping astronomical riches. So what other treasures are still out there in the universe—King John's crown jewels? The original decor from the Amber Room in St. Petersburg? A Boba Fett doll in mint condition? And just how easy would it be to acquire them?



CELEBRITIES

Country's Cash Kings

Pickin', grinnin', earnin': the top moneymakers.

GARTH BROOKS may have friends in low places, but his earning power has stayed extraordinarily high for nearly three decades. Thanks to the 53-year-old singer's return from semiretirement—and his accompanying tour with wife Trisha Yearwood—Brooks pulled in $90 million over the past 12 months, the biggest single-year payday FORBES has ever recorded for a country act.

He's not the only one: A new generation of stars led by Jason Aldean and Luke Bryan now make as much as the highest-paid DJs and rappers. Not exactly fodder for a sad song, but we doubt anyone's complaining.

1. **Garth Brooks** | $90 million
2. **Toby Keith** | $53 million
3. **Jason Aldean** | $43.5 million
4. **Luke Bryan** | $42.5 million
5. **Kenny Chesney** | $42 million
6. **Tim McGraw** | $38 million
7. **Florida Georgia Line** | $36.5 million
8. **Zac Brown Band** | $32 million
9. **Miranda Lambert** | $28.5 million
9. **Blake Shelton** | $28.5 million
11. **Keith Urban** | $28 million
12. **Eric Church** | $26 million
13. **Brad Paisley** | $24 million
14. **Rascal Flatts** | $19.5 million
15. **Lady Antebellum** | $17 million

FIGURES REFLECT PRETAX EARNINGS FROM JUNE 2014 TO JUNE 2015 BEFORE DEDUCTING FEES FOR AGENTS, MANAGERS AND LAWYERS. ESTIMATES INCLUDE DATA FROM POLLSTAR, NIELSEN AND ORIGINAL REPORTING.

MATRIX BY ABRAM BROWN; COUNTRY CASH KINGS BY ZACK O'MALLEY GREENBURG
JOHN LEYBA / THE DENVER POST / GETTY IMAGES (BOTTOM); XINHUA / DAI TIANFANG / GETTY IMAGES (TOP)

MARCIANO FAMILY

+$60 MILLION

NET WORTH: $1.3 BILLION

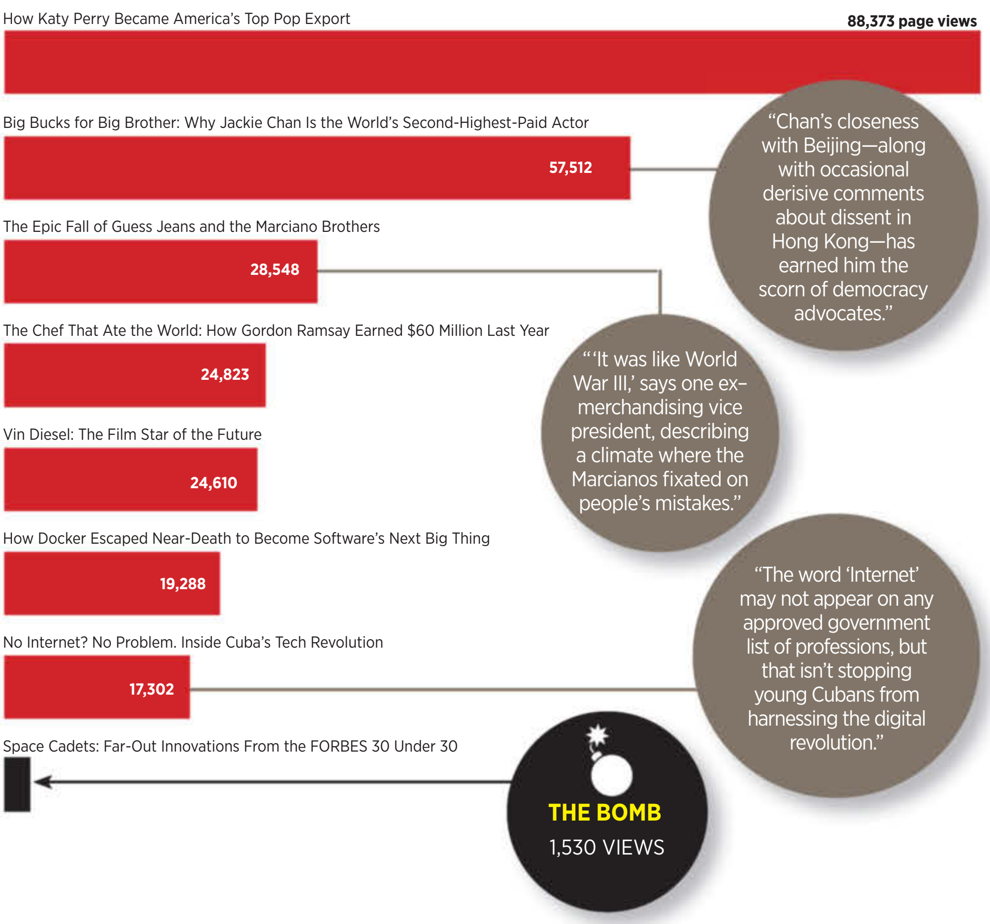
Two weeks after FORBES rips Paul Marciano's mismanagement of Guess, he steps down as CEO. Investors cheer, boosting shares 7% in a day.

CONVERSATION

WE'RE JUST GOING to go ahead and turn this space over to pop star-cum-tycoon Katy Perry, she of the $135 million annual income and cover subject of our July 20 World's Highest-Paid Celebrities issue: "Before accepting the offer to be on the cover of FORBES, I was told that a lot of women have previously shied away from doing it," she posted on Instagram. "I wondered if it was because they thought socially it would look like they were flaunting or bragging or it wasn't a humble decision. Ladies, there is a difference between being humble and working hard to see the fruits of your labor blossom, and your dreams realized. Hopefully this cover can be an inspiration to women out there that it's okay to be proud of hard-earned success and that there is no shame in being a boss." Amen, Katy—couldn't have said it better ourselves.

THE INTEREST GRAPH

Queen of the clicks: Beautiful, business-savvy Katy Perry trumped all others online for stories from our July 20 issue.



WILD ABOUT KATY

Global reaction to Boss Perry's proud-to-own-it ethic.

MINDY KALING, star of *The Mindy Project:* "So awesome. And balling in Moschino, no less."

BUSTLE.COM: "Her POV perfectly echoes the actual definition of feminism: 'The advocacy of women's rights on the grounds of political, social and economic equality to men.'"

INSTYLE.COM: "Sounds like a party we can get on board with."

MTV NEWS: "If there's one person who could own her success—and her style—on the cover of FORBES, it's clearly Katy."

VARIETY: "While Taylor Swift is reported to have 'Bad Blood' with Katy Perry, she couldn't draw blood from Perry in [FORBES'] ranking."

COSMOPOLITAN U.K.: "If you're gonna get revenge for someone writing 'Bad Blood' about you, do it like this. Nailed it."

I-D MAGAZINE: "Sorry rappers, but the ladies of pop are the FORBES 100 cash money millionaires."

BILLBOARD.COM: "Katy Perry is more hot than cold these days—and her bank account proves it."

BY MICHELA TINDERA

ETHAN PINES (TOP)

EVIL'S ROOT: NO GROWTH

WHAT THEORY explains the following?

• Stocks are hitting record highs, yet 60% of Americans think the country is in recession.

• A solid majority likes President Obama's Iran nuclear deal, but only a third believe it will work. Such a position (like but doubt) is both passive and fatalistic—perhaps even suicidal.

• The phrases "all lives matter" and "everyone can succeed if they work hard enough" are now fighting words to the political left. Apologies are due, or else watch your reputation and career evaporate.

• On the right a businessman who has filed for corporate bankruptcy four times trumpets his aim to lead the U.S. to a rich future. He sneers at a former POW who was tortured for five years. The candidate says he will make the country great again. He leads in the polls.

It's nut time in America.

The theory behind all of this? I'll offer one. It has to do with the collapse in productivity growth, which, in turn, has led to slow economic growth. The results for the nation have been like a slow death from dashed hopes and mounting frustration.

The facts about our productivity falloff are not in dispute. Here are the annual rates of productivity growth.

• 1948–2014: 2.4%
• 2002–2014: 2.0%
• 2010–2014: 1.2%

And halfway through 2015 we've yet to see any productivity growth at all.

Are wages stagnant? For many people they are. But wages can't rise unless they're supported by productivity growth. Won't higher minimum wages do the trick? No. Absent productivity growth, a higher minimum wage will be paid for in other ways. Payroll pools can't expand without higher productivity growth, so one person's higher wage is another person's loss of full-time work.

Now, to complete the theory of why it's nut time in America: This stagnant economic pond is what turns people against one another. When growth is absent, people compare themselves with others. They become jealous. They start to believe that successful people must be stealing from the rest of us. They succumb to paranoid political theories and crackpot politicians.

GROWTH IS A VIRTUOUS LOOP

In a growing economy a quite different thing happens. People still compare, but they compare themselves with their potential future selves. They look ahead with hope, even excitement. They start businesses. They hire ahead of demand—and thus create demand.

To be fair, there is a counterargument about the decline of productivity in the U.S. It's not whether the numbers show little or no growth—it's whether they represent meaningful information. Google's chief economist, Hal Varian, argues that technology saves time, removes the need for grueling labor and holds down prices. Those are social goods, even if they don't raise traditional productivity numbers.

Others argue that flat overall productivity growth masks the highly uneven nature of technology's winners and losers. If you know how to use technology to boost sales and become faster and more efficient, you'll become more productive. But many people and companies don't know how. Technology is evolving so fast it mystifies many of us. By the time we figure it out, the productivity winners have moved on.

The battle over Uber in Paris, New York and many other cities around the world says much about productivity's winners and losers. By leveraging cars it doesn't own and using drivers who work as independent contractors, Uber is more productive than a taxi or limo company can ever be. So much so, say the taxi and limo companies, that Uber must be cheating. And now presidential candidates have to explain where they stand on Uber.

What should be at the center of politics, of course, is a discussion on how we can raise productivity across the board. A simpler, flatter tax code would help. Fewer and simpler regulations, such as for small banks that pose no risk to the economy, would help. Both measures would free entrepreneurs from mind-numbing compliance work. New business formation—sadly missing in action in today's economy—would blossom. A better and more practical education for kids would help, too.

Indulging in paranoia and political crackpots won't help.

RICH KARLGAARD IS THE PUBLISHER AT FORBES. HIS LATEST BOOK, *TEAM GENIUS: THE NEW SCIENCE OF HIGH-PERFORMING ORGANIZATIONS*, CAME OUT IN JULY. FOR HIS PAST COLUMNS AND BLOGS VISIT OUR WEBSITE AT WWW.FORBES.COM/KARLGAARD.

THOMAS KUHLENBECK FOR FORBES

AMITY SHLAES // CURRENT EVENTS

LETTER TO A NEW VOTER

DEAR NEW VOTER,
You've probably noticed that presidential candidates like to talk in generalities about the economy. They assume that's necessary to ensure political survival. It's hard to disagree. To get specific about Social Security or Medicare is to get hammered. It doesn't help that those doing the hammering are often remarkably underinformed.

Still, as two new books remind us, the economic challenges confronting individual voters are specific—especially those facing people born just a couple of decades ago, like you. The first is *Falling Short: The Coming Retirement Crisis and What to Do About It* (Oxford University Press) by Charles D. Ellis, Alicia H. Munnell and Andrew D. Eschtruth. The second is *Disinherited: How Washington Is Betraying America's Young* (Encounter Books) by Diana Furchtgott-Roth and Jared Meyer. Munnell served in President Bill Clinton's Administration, Furchtgott-Roth in President George W. Bush's. Neither book, however, feels partisan, and both supply numbers that matter intensely to Millennials. Herewith, some data points highlighted by one or the other of these authors.

• **$400.** That's the amount of monthly pension a person who is young today will receive when he or she retires, unless the law changes and that person saves more than the average. The only way $400 a month in private pension in 2065 doesn't sound terrifying is when you consider the government pension, Social Security, might supply the balance of a retiree's needs. But seniors are taking so much from the Social Security kitty right now, in 2015, that what remains for grandchildren will be minimal.

• **11.** The multiple of annual earnings that young Americans need to save if they want to sustain their working lifestyle in retirement.

• **$29,400.** The average debt of a student upon leaving college. That sounds all right until you consider that in 1993 the average student debt ran around $10,000, or one-third today's level (and, yes, those figures are in constant dollars). Paying off debt is tougher, too. Today 8% of college grads under 25 are unemployed, but even more grads are underemployed—44% compared with only 34% in 2001.

• **$6,000.** The hidden tax that regulation imposes on a person each year. In Wyoming it takes 175 days to qualify as a barber, or six college debt payments. In Nevada qualifying takes more than two years. Then there are even less obvious burdens—for example, Dodd-Frank, the financial-regulation law, protects big companies but makes life hard for the small new ones that young people want to start. Even regulation of the supposedly pro-youth minimum wage actually discriminates against youth by encouraging employers to hire more productive (older) talent.

METICULOUS MUNNELL

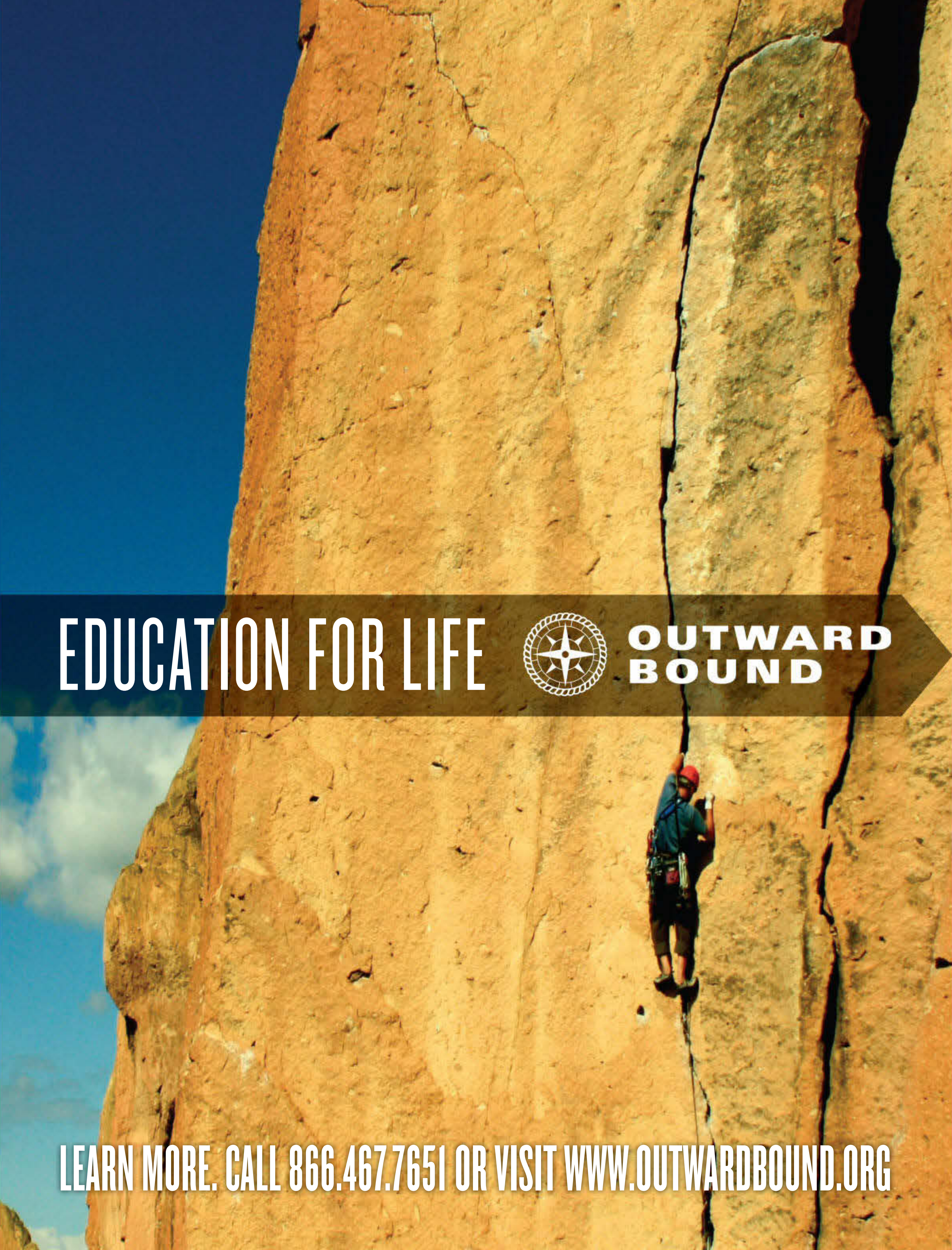
It is in their responses to these problems that *Falling Short* and *Disinherited* diverge. Although its meticulous recommendations do at times read like memos from the IMF, *Falling Short* demonstrates it is possible to narrow retirement shortfalls by working with and through government. The *Falling Short* plan, in brief: Raise the retirement age to 70, shift some of the burden of Social Security to the income tax, invest some of Social Security's money in the stock market and persuade individuals to save more. That translates into a Greek scenario: significant pain for gain that comes only later, if at all. But Munnell's program does force long-term numbers back in line. Actuarially savvy, *Falling Short* also features some practical tips, such as buying an annuity that's affordable because payout starts at age 85.

By contrast, *Disinherited* would subordinate government. The authors posit that reducing taxes, regulations and the federal budget will permit the economy to do its part to benefit work. Growth would strengthen so that workers could plan a successful financial life on their own. *Disinherited*'s philosophy also encourages undergrads to do some serious rethinking. The authors note that choosing certain arts and social science majors practically guarantees an insolvent adulthood. Successful musicians are outliers.

As readers know, I personally prefer the "less government" approach. Still, both *Falling Short* and *Disinherited* make for worthy reads, supplying data that first-time voters can "hammer"—productively. These books actually enlighten, and the fiscal light they shed will make everyone warm to the idea of a careful, detailed discussion. That, in turn, will take us all to a change as welcome as federal solvency: a political environment in which specific answers enable, rather than prevent, political survival.

THOMAS KUHLENBECK FOR FORBES

AMITY SHLAES, PRESIDENTIAL SCHOLAR AT THE KINGS COLLEGE AND CHAIR OF THE COOLIDGE FOUNDATION BOARD; PAUL JOHNSON, EMINENT BRITISH HISTORIAN AND AUTHOR; AND DAVID MALPASS, GLOBAL ECONOMIST, PRESIDENT OF ENCIMA GLOBAL LLC, ROTATE IN WRITING THIS COLUMN. TO SEE PAST CURRENT EVENTS COLUMNS, VISIT OUR WEBSITE AT WWW.FORBES.COM/CURRENTEVENTS.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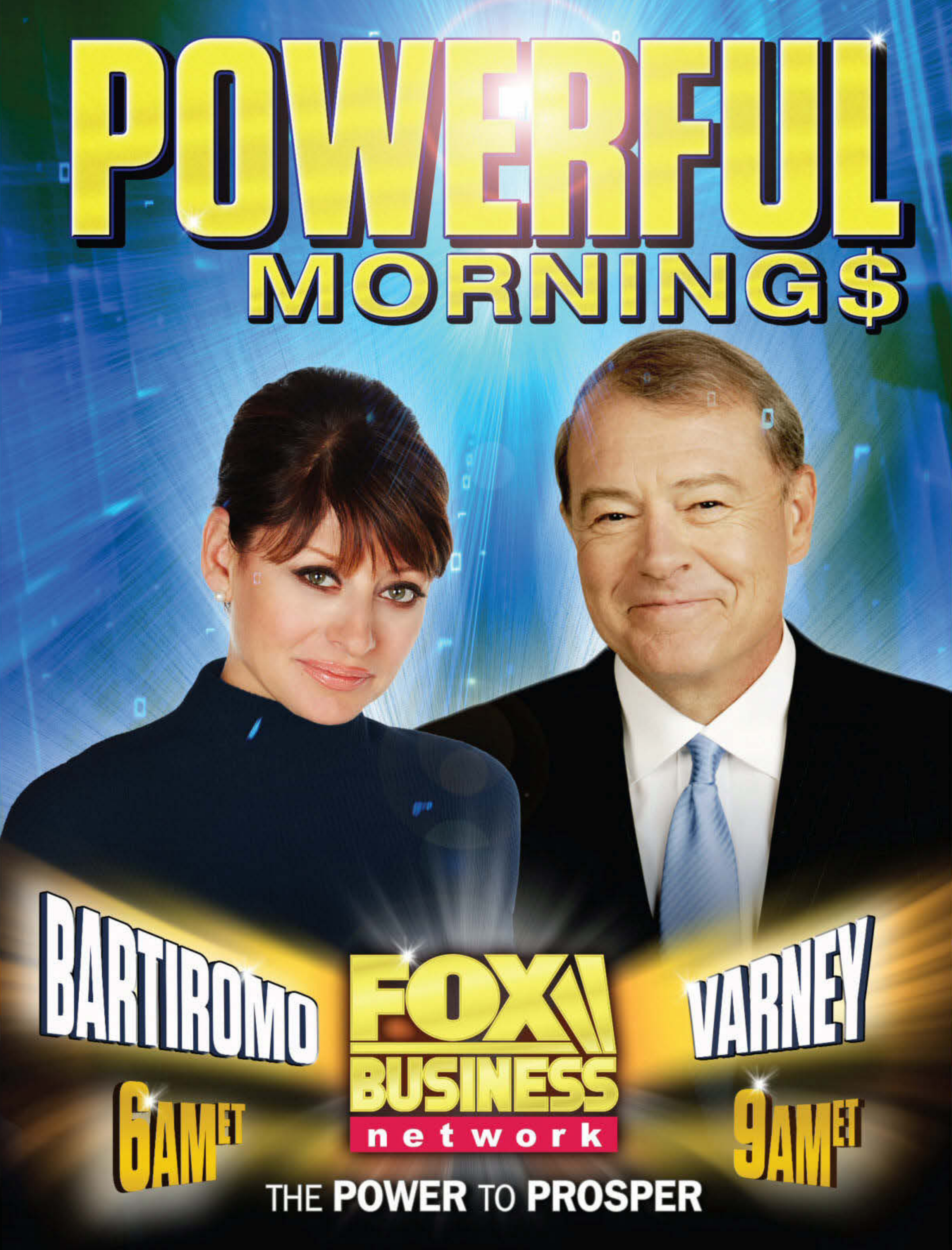
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MORNING$
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6AM ET
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VARNEY
9AM ET
THE POWER TO PROSPER

Verticals AUGUST 17, 2015

Sixty-five percent of America's paper is recycled, up from less than 34% two and a half decades ago. As that number continues to grow, so will billionaire cardboard-boxmaker Anthony Pratt's fortune.

PAGE 36

JAMEL TOPPIN FOR FORBES

Thanks, Jeff Bezos!

By turning an endless supply of trash into an endless supply of boxes, billionaire Anthony Pratt is the unlikeliest beneficiary of the migration to online retailing.

BY CHASE PETERSON-WITHORN

When Anthony Pratt, the affable, orange-haired Australian billionaire behind America's biggest maker of fully recycled cardboard boxes, takes you on a tour of his factory in Valparaiso, Ind., you're bound to stop for the bronze plaque outside: "Dedicated by Muhammad Ali on July 15, 2000." "I like to say we're the second-greatest boxer of all time," Pratt chuckles.

Well-worn jokes and a friendship with Ali aren't the only things he has to be happy about. His privately held Pratt Industries is one of the fastest-growing players in America's $35 billion corrugated packaging industry and the only big boxmaker using 100%-recycled paper. By taking the nation's paper trash—yellowed newspapers and greasy pizza boxes—and turning it into new packaging, Pratt has helped bolster a personal fortune FORBES estimates at $3.4 billion, while saving some 50,000 trees a day. That's especially significant in today's world of online shopping, where everything comes in a box. "We were in recycling before recycling was cool," says Pratt, 55.

In the past 15 months alone the company, based in Conyers, Ga., has invested nearly $450 million in America, most notably constructing a $260 million paper mill (the company's fourth) next to the Ali-autographed box factory in Valparaiso. The firm does $260 million in Ebitda (on $2 billion in sales), and Pratt thinks it will surpass $300 million once the new mill—driving his first big push into nearby Chicago, one of the largest box markets in the U.S.—comes online in September. In total the company operates more than 130 sites, including paper mills, box factories and distribution centers, across 26 states and Mexico, churning out more than 3,000 tons of paper every day. That's enough to create 12 million boxes, all without cutting down a single tree. "They're the upstart player in the industry," says Mark Wilde, managing director at BMO Capital Markets. "It's a remarkable story."

Pratt's journey began at a single wasteful paper mill in Macon, Ga. in 1991. That's when he was dispatched to the U.S. from Australia, where his family operated Visy, a recycled-packaging juggernaut founded by his grandfather in 1948. (Today Pratt Industries and Visy operate as sister companies, both run by Pratt.) Arriving in the country he quickly saw a gap in the market. Everyone was making paper from trees. Why wasn't anyone just recycling the stuff heading for the landfills, as Visy did in Australia? He soon shuttered the Macon mill and focused on recycling the waste produced by competitors.

That decision—made more than a decade ahead of the recent consumer-driven outcry for greener products—unleashed a domino effect of efficiency. Unlike his rivals, who must operate mills close to timber sources and then send the paper to factories near cities, where it's turned into boxes, Pratt situates operations where they make the most

JAMEL TOPPIN FOR FORBES

Paper tiger: Pratt Industries CEO Anthony Pratt at his plant in Valparaiso, Ind.

By feasting on the refuse of rivals, Pratt Industries is on track to double U.S. sales to $4 billion by 2022.

logistical sense: near cities, which are full of waste—and customers—thereby cutting transportation costs.

And because he's relatively new to the U.S. market and builds his own factories—rather than acquiring existing plants, like most of his competitors—Pratt's facilities are some of the most advanced and efficient in the industry. He builds cheap by owning his own construction company, one that specializes in making mills on budget. Newer technology and the relative simplicity of the recycling process allow his mills to employ just a quarter of the staff his competitors do. "We're building the space shuttle competing against other people who are still flying Spitfires," he says.

Still, he's dependent on his competitors to keep pumping out more paper to be thrown away, collected and sent to his mills. After all, paper fiber can be recycled only so many times before it starts to disintegrate. But given the size of America's paper market and how entrenched his competitors are in the standard (and profitable) method, he's bullish about the future.

He sees Pratt Industries, which controls less than 5% of the U.S. market, doubling in size to more than $4 billion in sales in the next seven years while global sales grow to $10 billion. That includes $1 billion from his newly launched California operation, a play into the state's massive fruit and vegetable market. Pratt is also cozying up to big shippers like Amazon and the U.S. Postal Service, betting that the rise of online retailing will translate to more boxes being sent directly to consumers who want to see sustainable products. And Pratt continues to expand one of his most successful product lines: lightweight packaging.

He's also dependent on U.S. companies to keep pumping out products to be boxed, tethering him to American manufacturing. That puts him in a position many might find uncomfortable, yet Pratt is happy to rely on a sector many once counted out. Industry is booming, according to Pratt, and the country's regenerative nature is more than enough to carry a young boxer a few more rounds. "My policy in America is 'steady growth is forever,'" says Pratt. "We think sustainability is a wave that's not going away anytime soon." *

FINAL THOUGHT

"Ours is a culture and a time immensely rich in trash as it is in treasures."

—RAY BRADBURY

TRENDING

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JAMEL TOPPIN FOR FORBES (LEFT); DANIEL ACKER / BLOOMBERG

COMPANY
MCDONALD'S
Can new CEO Steve Easterbrook turn around fast food's flailing giant with an all-day breakfast menu? (And why didn't it do this years ago?)

PERSON
MARILLYN HEWSON
While rivals diversify, Lockheed's CEO doubles down on defense with a $9 billion purchase of helicopter-maker Sikorsky.

IDEA
OBAMATIME
Small businesses across the country are freaking out over proposed Labor Department rules to expand overtime eligibility for more than 5 million white-collar workers.


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STRATEGIES

RETAIL

It's Gotta Be The Shoes

Like all fads, Crocs soared—and crashed—based on hype. A new CEO is focusing on (gasp!) the product.

BY ERIN CARLYLE

It was the kind of moment fashion brands dream about. There was tiny Prince George, out with his royal mum in June, running around on the grass in front of a horde of paparazzi. On his feet? Little blue Crocs. Within hours shots of the romp were on websites around the world. Sales of the ungainly plastic clogs spiked at Amazon.co.uk. "We were thrilled to see Prince George wearing Crocs," says CEO Gregg Ribatt.

That's likely the understatement of the year, because if any brand could use a moment, it's this one. After booming through the 2000s with sales that rocketed from $1.2 million in 2003 to nearly $850 million just four years later, the company has been in a tailspin.

By 2013 sales hit $1.2 billion, but profits were down 92% year-over-year to only $10.4 million. Shares that October hit a low of just over $12, a 43% dip from the IPO price and an 84% tumble from their 2007 peak. Nine of the shoemaker's top ten execs at the time had no experience in the footwear business. Under their crackerjack leadership the company had trouble with everything from order fulfillment to products that bordered on the ridiculous (holey clogs lined in fleece?). It nearly went under—twice. The company considered going private. "This is a brand that's succeeded in spite of having no real good leadership behind it," says analyst Jim Chartier of Monness, Crespi, Hardt & Co.

Enter Blackstone, the private equity shop. In January 2014 it swooped in with a $200 million investment for a 13% chunk of the company. Crocs' board put Ribatt, a consultant to Blackstone during its review, in charge.

A shoe vet, he helped lead two companies to successful exits: As an executive vice president and COO at Bennett Footwear he shepherded brands like Via Spiga, Franco Sarto and Etienne Aigner until it was sold to Brown Shoes for

Run, don't walk: Crocs CEO Gregg Ribatt has a background in footwear, which makes him a rarity in the company's executive history.

STEPHEN RAMSEY FOR FORBES

$205 million in 2005; at Collective Brands he helmed the performance and lifestyle group (Keds, Sperry Top-Sider, Saucony, Stride Rite) until Wolverine Worldwide acquired the group for $1.24 billion in 2012.

Shoes run in his family. His great-grandfather made inner soles; his grandfather sold forms for crafting shoes. His father met his mother at a footwear company. Some dads stop for hot dogs on the way to Little League. Ribatt's father stopped to go shoe shopping. "I grew up in and around the business," says Ribatt.

Since joining Crocs, he's closed unprofitable stores, tightened production and focused on improving wholesale distribution. He's added execs with footwear experience—from Reebok, Sperry Top-Sider, Tommy Hilfiger and Nike—in key slots. Crocs cut its three regional marketing arms and brought them under one global office.

In Q4 the company will offer its new spring styles to capitalize on cruise season, a smart footwear move it has never taken previously. Going into spring 2016 Crocs will have 50% fewer products, Ribatt says, and will focus on its core: selling plastic clogs, as well as more attractive molded flip-flops and sandals.

It's an overdue return to the company's roots. In 2002 Scott Seamans, a guy from Boulder, Colo., stumbled across a clog made by Canada-based Fin Project N.A. out of a waterproof, bacteria-resistant material and enlisted three friends to turn the shoe into a company.

One was Ron Snyder, an exec at Flextronics, the second-largest electronic contract manufacturing firm in the world, who served as CEO from 2005 to 2009. Under his leadership the company went public in February 2006, raising $208 million—more than Nike or Reebok in their initial offerings. By 2007 Crocs had a $6 billion market cap with shares trading at $75. Snyder made Crocs' first big push, acquiring new brands and expanding its product offerings from 25 models in 2006 to more than 250 the following year.

But he had trouble with fashion industry fundamentals, like delivering the right styles on time. In 2007 Crocs produced too many Classics clogs and ended the year with an inventory glut. The next year demand was up for newer styles, and it missed sales.

"Since they were $30 shoes and for the second year in a row they couldn't deliver what [stores] were told what they could get, the retailers said, 'See you later,'" says Sam Poser, an analyst at Sterne Agee. By 2008 sales dropped 15% to $722 million, and the company posted a $185 million loss.

John Duerden, a former Reebok chief with a reputation for specializing in turnarounds, took the helm in 2009 and stabilized the company, consolidating warehouses, reducing inventory, and boosting retail and Internet sales. He left after a year, but Crocs still did well on the many changes he made, according to analysts.

Unfortunately his successor, John McCarvel, another former Flextronics exec who had joined Crocs in its early days, opened stores and got away from the core product, adding higher-end leather shoes, fur-lined boots and ballet flats. Sales shot up—in 2014 Crocs had sales of $1.2 billion—but still they lost $4.9 million.

So far Ribatt hasn't been able to pull out of the funk. Quarterly profits are down year-over-year (with currency an 8% to 10% drag), and shares are lately trading around $14.50 after hitting a high of $16 in May.

But analysts are hopeful: 55% of those who cover the stock rated it a buy in July, compared with just 10% before Ribatt took over.

He's optimistic. "When Crocs makes product styled right, priced right and delivered on time," says Ribatt, "it performs really well."

Or will, he hopes. Baby steps. *

FINAL THOUGHT

"It was just about comfort, it wasn't about fashion. Now I'm a fashion icon."

—MARIO BATALI ON CROCS

BY THE NUMBERS

WHITE-COLLAR BOOMTOWNS

If you're looking to track growth, the somewhat nebulous category of "business services" jobs is a pretty good barometer. The largest high-wage sector in the U.S., employing 19.1 million people, it largely covers managerial and administrative work. FORBES asked demographer Joel Kotkin to come up with a list of cities creating the most such jobs.

MARK MILLER / GETTY IMAGES

1. San Jose, Calif. Region

LOCAL SHARE OF BUSINESS SERVICES JOBS
$35.4 mil

GROWTH IN BUSINESS SERVICES EMPLOYMENT, 2014
7.9%

GROWTH, 2009–14
34.7%

2. San Francisco Bay Area

LOCAL SHARE OF BUSINESS SERVICES JOBS
$24.8 mil

GROWTH IN BUSINESS SERVICES EMPLOYMENT, 2014
9.0%

GROWTH, 2009–14
42.3%

3. Raleigh, N.C.

LOCAL SHARE OF BUSINESS SERVICES JOBS
$19.8 mil

GROWTH IN BUSINESS SERVICES EMPLOYMENT, 2014
8.6%

GROWTH, 2009–14
36.5%

4. Nashville, Tenn. Region

LOCAL SHARE OF BUSINESS SERVICES JOBS
$15.3 mil

GROWTH IN BUSINESS SERVICES EMPLOYMENT, 2014
4.3%

GROWTH, 2009–14
41.4%

TECHNOLOGY

MOBILE

Megabyte Mogul

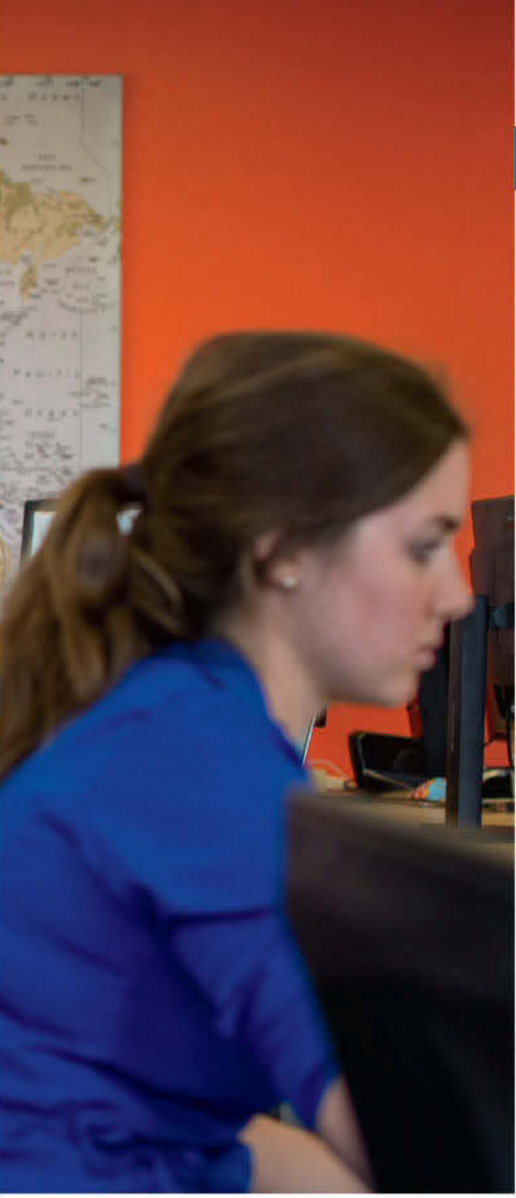
Millions of smartphone owners in poor countries can't afford to get online, so Nathan Eagle gives them data for free. Not everyone agrees with his methods.

BY PARMY OLSON

There are 7.3 billion people in the world. By 2020 some 6 billion will own a smartphone, yet many won't use these revolutionary devices to go online. "They're using smartphones like dumb phones," says Nathan Eagle, founder and CEO of Jana.

You've probably never heard of Jana, but for millions in the developing world it's a meal ticket to the mobile Web. Indian users of its mCent app can get 13 rupees' worth of mobile data as a reward for downloading and trying LINE, a chat app, or 28 rupees' worth for using the music service Saavn, free data they can use to surf the Web or look for a job. LINE and Saavn pay for the data, and Jana takes a cut. Its goal beyond increasing profits is to provide free Internet to billions of people. Fanciful as that sounds, mCent has collected 30 million users in less than a year, thanks to long-standing partnerships with 311 mobile operators in 93 countries.

SHAWN G. HENRY FOR FORBES



Hacking the smartphone revolution's biggest bottleneck: Nathan Eagle at Jana's offices in Boston.

"I'm not aware of any other company that has more than one-tenth of this scale," says Eagle, a 38-year-old blond, no-nonsense ex-academic who founded Jana six years ago. The only exception may be Internet .org, which is Facebook's grand and contentious project to get the next billion connected to the Internet and has a third as many users as Jana.

Jana spent years building out its data crediting infrastructure, making money through sponsorship deals with brands like Unilever. Indian consumers would buy a shampoo bottle and redeem a code in the packaging to get free airtime. Then in early 2014 Jana went fully digital with mCent, giving airtime rewards just for trying out apps like Amazon or Indian rival Flipkart, and its growth exploded. Within a year its annual revenue run-rate had shot up from a few hundred thousand to $50 million, and mCent was the fifth most popular app in India. Jana became profitable in early 2015. Around half of its revenue comes from a handful of big-name developers like China's Tencent, Amazon and Twitter, with the rest (1,500 apps and counting) coming from a long list of unfamiliar names.

Jana has succeeded because it solves the harsh economics of mobile in emerging markets: Handset prices have plummeted while the cost of data has not, as if in defiance of Moore's Law. Indians can buy a smartphone for as little as $40, yet their average mobile bill is a relatively expensive $7 a month, of which half accounts for Web access. Data in India may be extremely cheap by Western standards, costing around $4 for a gigabyte of 3G data (compared with $20 per GB for a Verizon prepaid mobile hot spot in the U.S.), but that's still pricey for many locals who make a minimum wage of 20 cents an hour. Mobile data costs up to 10% of a person's average wage in Brazil, Eagle says, and more than a third of someone's income in Africa, while in the U.S. it's more like 1% to 2%, according to the ITU.

The result: Only 57% of India's smartphone owners bother turning on their data, and those who do consume a mere 80MB per month on average, about a tenth of what Americans use. In Johannesburg teens congregate at the big mall on weekends not to shop but to use its free Wi-Fi, says Ovum's South African analyst Thecla Mbongue. "You have lots of people sitting there and downloading everything," she says.

More cell towers would help increase bandwidth, but carriers in the developing world often have thin margins, increasing competition and paltry capital budgets. In many countries average revenue per user is declining as poorer people get onto the network. "If all of those people were to get online it would be a horrible service," says Ovum's Bangalore-based senior mobile analyst Neha Dharia. "The reason we can get online is because only a few of us are online."

This poses a problem for large Internet firms such as Facebook, Twitter and Google that need to figure out how to serve the data-starved masses (with ads). Google's Project Loon and Facebook's Internet.org both include plans to beam free Wi-Fi over developing nations from high-altitude balloons or drones, but test flights are only recently ramping up, and it'll likely be years before there's any real-world impact.

A quick and dirty solution is setting up deals with carriers to build zero-rating systems, where Internet companies cover the cost of accessing their sites. Facebook, Google and WhatsApp have pioneered the practice for years with stripped-down services like Facebook Zero (a text-only version with no photos), while Google has a data-sponsorship program in the works to make Android apps more attractive, according to reports earlier this year.

The practice is controversial in principle, since apps that can pay their users' data bill have an unfair advantage over smaller ones that can't. End users can also get a distorted view of what the Internet is. Around 11% of Indonesians who said they used Facebook Zero didn't realize they were on the Internet at all, according to a study commissioned by the website Quartz in early 2015. Indian campaign groups have attacked Facebook's Internet.org app, which lets users browse a selection of sites for free, saying it misleads new smartphone users on the extent of the open Web.

Jana claims it sidesteps these infringements on Net neutrality because once mCent's users have tried a sponsored app, they can access any website, watch any video or install any app they like. "We give them at least double the data used [for the free download]," says Eagle.

Jana's rapid growth should give Google, Facebook and carriers confidence in their zero-rating systems, controversies aside. "Sponsored data is absolutely one of the tools that operators in emerging markets need to drive up data consumption," says Strategy Analytics analyst Phil Kendall.

Jana got its start in 2009 after Eagle completed a stint as a Fulbright professor at the University of Nairobi while still a member of the faculty at MIT's Media Lab. In his research Eagle got access to the back-end billing systems and data for operators in eastern Africa, flying to cities like Kigali, Rwanda to poke around the wires and cables of underground data centers.

During a trip to the coast of rural Kenya, Eagle found himself working out of a hospital where, to his surprise, a nurse approached asking if he'd give blood to help with an emergency transfusion. Over the next few months he was asked several more times to give blood. "Out of my own self-interest I looked at why we kept running out of blood," he says. The problem was latency. The delivery guy came around only once every two weeks to bring new blood and report back on supply levels.

Eagle programmed an SMS system that allowed the nurses to text their daily supply levels to the central blood bank. The hospitals loved it, but after a month no one was using it because each text took a small chunk out of a nurse's daily wage. Eagle used his access to the carrier's billing system to write a simple program that paid nurses ten Kenyan shillings, which included a small thank you amount for each SMS to the blood bank. Almost immediately the nurses started using the platform again. Eagle paid the data costs out of his own pocket—less than $250 a year—before another organization stepped in. Thus was born sponsored data.

Eagle raised $1 million in seed money to build the initial data-sharing system and spent the next five years hiring telco engineers and flying out to remote regions of Africa and Asia to meet local carriers. At one point he flew to Lagos, Nigeria with a duffel bag of dollar bills to meet the middle manager of a local operator, offering the money for a regular connection to its billing system. By 2011 Jana had raised $8.5 million from Spark Capital and started to sign up big brands like Nestlé, Procter & Gamble and Unilever to sponsor airtime rewards.

But Eagle wasn't happy. Jana was morphing into an ad agency, and he was going to have to triple head count to help run each brand's campaign. In late 2013 Eagle made the gut-wrenching decision to tell Unilever that Jana was pulling the plug on its campaign and would return its cash. "It was enough money to keep me up at night," he says.

Instead, he got his engineers to create mCent, the app that paid consumers in data to try out any other app they wanted. Within months of its release the number of mCent's users shot up to the millions. "There is no doubt in my mind it was the right call," he says.

Jana collects valuable data on each mCent member, such as app-usage history and which friends were signed up. Clients like LINE, for instance, pay Jana to get their apps in front of users who spend more than ten minutes a day on WhatsApp. Jana has to be clear with users about what their free data will really cost in lost privacy. "The problem for all these business models is they're so often not transparent," says analyst Cyrus Mewawalla of CM Research, adding that poorer consumers who are unfamiliar with the nature of the Web risk being exploited.

MCent can fall victim to exploitation, too, when users download lots of apps they don't care about just to get free data. "We've seen a lot of games that have integrated providers who will show you an ad for another game," says Neil Rimer, cofounder of Index Ventures, who is skeptical about the quality of Jana's impressions. "I'm not a believer because you tune the ad out completely." Jana avoids that by personalizing mCent to the relevant users, Eagle counters, and tracking time spent in apps downloaded.

Eagle also says some of the critics of his corporate-sponsored approach are being paternalistic. "Giving access to only a small slice is not a great service. We want people to have access to the [whole] Internet. The benefit far outweighs the downside of exposing people to global brands." *

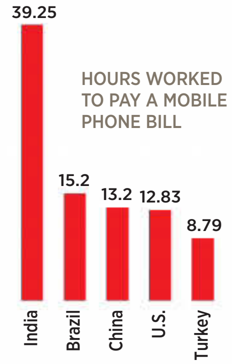
FINAL THOUGHT

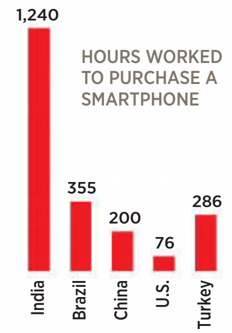
"I remember every fact I am exposed to, sir." **—BRENT SPINER**

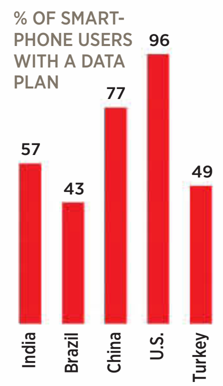
BY THE NUMBERS

THE BITE OF MEGABYTES

MOBILE COSTS HIT POOR NATIONS THE HARDEST. AS A RESULT, PEOPLE DECLINE DATA PLANS, AND CARRIERS LACK PROFITS TO IMPROVE NETWORKS.







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work on purpose

Dropbox Under Siege

As rivals are firebombing it and its $10 billion valuation seems overly rich, behind the scenes cofounder Arash Ferdowsi works to keep the file-synching upstart humming.

BY MIGUEL HELFT

ARASH FERDOWSI is fiddling absent-mindedly with the Lego bricks that cover the table in a conference room at Dropbox headquarters. His attention is focused on a whiteboard on which a trio of engineers and product managers are presenting early mockups of Notes, an unreleased app that would allow

Ferdowsi at Dropbox HQ in San Francisco: "There is a massive, massive opportunity."

TIMOTHY ARCHIBALD FOR FORBES

people to collaborate more easily on files. Ferdowsi, 29, is the introverted, press-shy cofounder and chief technology officer of Dropbox, and his product review takes the form of a gentle grilling. As his colleagues deliver details of the new product, Ferdowsi interjects frequently with a gentle "Yep, yep" or "Yep, yep, yep" delivered in staccato bursts that always signal he knows what they're going to say before they finish their sentences. After peppering the trio with questions, he wraps up by issuing a set of instructions, leaving a small mark on yet another piece of a company whose products and culture he has done more to shape than anyone. "No one touches more of Dropbox than Arash does," says Ramsey Homsany, the company's general counsel. Ferdowsi's far-better-known cofounder, CEO Drew Houston, puts it more succinctly: "Don't start a company without him."

These days Dropbox may need to lean on Ferdowsi's talents and insights more than ever. The company, started eight years ago after Houston had just graduated from MIT and Ferdowsi was still a student there, has grown at a dizzying pace. With $1.1 billion in venture financing, it has racked up more than 400 million users and become synonymous with file storage and synchronization. But Dropbox has recently faced a barrage of questions from reporters and analysts who wonder whether its successful run can continue—and whether it can ever grow into the $10 billion valuation that investors gave it in its last round of financing more than a year ago. It's not hard to see why. No startup faces a more formidable group of competitors, which include Apple, Google and Microsoft. For them Dropbox's core capabilities are a feature they often view as a loss leader. Google recently offered free unlimited storage to users of its Photos app. Another competitor, Box, while smaller, is growing faster, according to IDC, and yet it, too, has faced investor skepticism as its shares have fallen almost 30% since the first day of trading. None of this is lost on Dropbox. "We compete with every major company in the world, and they're all firebombing us," says Houston.

These very real challenges don't appear to have slowed Dropbox much. The company continues to rack up consumers for its free service, with a small minority of those opting for the $10-a-month "Pro" account with additional storage. To compete more effectively for business customers, it developed an enterprise version of Dropbox and gradually beefed up its capabilities. Launched in April 2013, Dropbox for Business signed up some 100,000 customers through the end of 2014. The number of customers grew by another 30% in the first half of this year. While the bulk of them are small and midsize businesses, the number of large customers is growing rapidly, even though the company is only now building the sales force it needs to compete in the enterprise. Its global sales offices grew from five to nine in the past year. Even though rivals and some analysts say it does not yet have the product and security features demanded by large customers, that hasn't stopped the likes of News Corp., Under Armour and Facebook from signing up. "Security is very top of mind for us," says Brian McManus, Under Armour's senior director of IT, who has deployed Dropbox to more than 3,000 employees. "It met our needs."

Dropbox is private and does not disclose financials, but people close to the company say the numbers are healthy. Annual revenue is well north of the $400 million figure

FLASHBACK

WE PUT DROPBOX on the cover almost four years ago (Nov. 7, 2011), when the company had one-eighth as many users and was adding a new one every second. The juicy opening anecdote had Dropbox's young founders summoned to Cupertino in late 2009 by none other than Steve Jobs. They drove down in a Zipcar Prius. They were nervous. "I mean, Steve friggin' Jobs," said its CEO, Drew Houston. Jobs smiled warmly as he told them he was going after their market. In June 2011 iCloud came out. "He said we were a feature, not a product," said Houston, and if he had a nickel for every time someone has said that, he'd be richer than he already is. Dropbox is now worth $10 billion, and that story is up to 1.2 million views.

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that appeared in published reports, and it's growing faster than the 55% reported by IDC recently, these people said. Dropbox for Business alone brings in well over $100 million annually. What's more, Dropbox has kept the bulk of the cash it has raised, funding its growth through operations and putting off the need to go public soon. While Dropbox has suffered some executive departures, it continues to be a talent magnet. Last year it recruited Dennis Woodside, a Google veteran who was CEO of its Motorola unit, to be COO. In one week alone in July, it added a Microsoft veteran as its vice president of global sales and a product whiz with stints at Google, Facebook and Twitter as vice president of product. With 1,000 employees in San Francisco and more elsewhere, it's bursting at the seams of its still-newish 230,000-square-foot headquarters across from AT&T Park and is building another 292,000-square-foot office a couple of blocks away. "There is a massive, massive opportunity in front of us, much bigger than what we've captured so far," says Ferdowsi.

While Houston is the public face of Dropbox and Woodside is charged with expanding the business, Ferdowsi, who rarely gives interviews, lurks in the background and sweats the details, going from project to project to fix products or processes that need attention. He's known as the "chief debugger" for his propensity to file bug reports at all hours—3 a.m. missives are not uncommon. While he no longer codes, he is still the one making sure the company's growing family of products remains unified and retains a simplicity of design and ease of use.

Ferdowsi grew up in Overland Park, Kans., the only child of Iranian immigrants. He finished first in his high school class and headed to MIT. It's there that he met Houston, who first developed Dropbox out of frustration after he forgot to bring his thumb drive with important files on a trip. When Houston got admitted to Y Combinator, the Silicon Valley accelerator known to mint tech powerhouses, its founder, Paul Graham, urged him to find a partner. A friend suggested Ferdowsi. The two met for just a few hours before agreeing to team up. Shortly after, Ferdowsi dropped out a year before graduation to work on Dropbox full-time.

An early clash between the two shaped Dropbox's identity. The pair was planning the first corporate e-mail to all users. Houston would do most of the writing, while Ferdowsi would deal with graphics. Working with another early employee, Ferdowsi came up with a stick-figure animation to illustrate the Dropbox product. Houston thought the cartoonish look did not befit a startup that aspired to become a real company. Ferdowsi insisted that a potentially complex product like Dropbox needed to be accessible to all. He won the argument, and to this day Dropbox is known for its hand-drawn logo and animations.

Now Ferdowsi is focusing with similar intensity on things that will shape Dropbox for years to come. After COO Woodside noted that Dropbox's rivals were innovating at a faster pace, Ferdowsi took the criticism to heart and "completely changed the product-release approach," Woodside says. The result: Dropbox rolled out 75 new features and product improvements in the final quarter of last year, up from 49 in the third quarter. Ferdowsi recently redesigned the hiring process to speed it up, appointing a group of "debrief moderators" to collect feedback from interviewers so that no concerns go unaired.

Ferdowsi's focus on Notes, the new collaboration app, underscores one of Dropbox's new challenges. With the Googles and Microsofts of the world offering file storage and synch along with other apps, the table stakes in the business have risen considerably. Dropbox has had to make its service go beyond its original purpose by linking to some 300,000 third-party apps that interact with its technology. The company is also building its own apps to complement its core product. Some consumer products, such as Carousel, a photo app, and Mailbox, an e-mail app, may struggle against better-known rivals in competitive categories. But Dropbox needs to focus on productivity to move into the business world. "Synching the bits back and forth is not enough," says Ferdowsi. "You have to build engaging experiences on top of that." *

FINAL THOUGHT

"To say more while saying less is the secret of being simple." —DEJAN STOJANOVIC

TRENDING

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SPENCER PLATT / GETTY IMAGES

PERSON
BILL DE BLASIO
Uber's withering attack on New York's mayor gets him to back down on his plan to cap licenses for the company's growing fleet. Score one for disruption over sclerotic guild protectionism.

COMPANY
REDDIT
The busy social site with billions of monthly page views needs to decide if it's a font of bile or wisdom. Recent free-speech controversy costs Silicon Valley lightning rod Ellen Pao her CEO post.

IDEA
TALE OF TWO CHINAS
Apple is kicking butt in the Middle Kingdom. Qualcomm's chip sales there are weak. A shame not to have one's chips in the iPhone, no?


BELIEVING IN ELLIE KEPT ELLIE IN SCHOOL.
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The $48,000 Oven

Fast-growing retailer Pirch leverages gimmicks like in-store showers, gourmet chefs and secret entrances to sell high-end appliances.

BY LIYAN CHEN

At the Westfield Garden State Plaza mall in northern New Jersey only one storefront features a bathtub. Standing next to the earth-colored freestanding stone tub, where water flows in a gentle cascade, Jefery Sears, the 59-year-old CEO of Pirch, thinks the location couldn't be a more natural fit. "As you walk toward our store, you hit Neiman Marcus on the right, and you look down and see Gucci and Tiffany, too," he says.

Those neighbors matter to Pirch, which wants to make appliance retail more of an experience. Customers can walk inside and enjoy a complimentary latte or lemon-ginger water at Pirch's Bliss Café. They walk past the Kitchen, where chefs are spit-roasting chicken, before arriving at the pristine Sanctuary, a luxury bathroom filled with showerheads, saunas and tubs. Sears presses a button on an iPad, and water flows softly from a bowling-pin-shaped showerhead. "If you're late for work, and you're trying to get the shampoo out of your hair, you'll want to kick it," he laughs, pointing to the wall featuring two dozen shapes and spray patterns. "The concept for us is, If I'm going to pick a showerhead, I want to know how the water comes out."

Customers can schedule a time to come in and test the showers themselves (bathrobes provided). Though fewer than five customers a month do so, it's part of a strategy that makes the upstart chain one of the most innovative retail concepts around. In an era of online shopping and sparsely staffed warehouses, Pirch is doubling down on service and luxury. In 2014, after five years in business, it hit $113 million in annual revenue with seven locations.

Pirch declines to comment on whether the company (or any of its locations) is operating profitably—a surefire sign it is not.

But the Costa Mesa, Calif. store, which opened in 2011 and became the prototype for the chain, is projecting same-store sales growth this year of a staggering 50%, with sales per square foot of more than $2,500, a figure higher than all but three U.S. chains (behind the likes of Apple and Tiffany). "The industry has been dominated by big-box retailing," says retail analyst Dana Telsey of Telsey Advisory Group. "The products featured at Pirch start where Home Depot and Lowe's end."

The inspiration for Pirch was frustration. When Sears met his cofounder, Jim Stuart, now chairman of Pirch, they bonded over their unpleasant experiences buying appliances. The 48-year-old Stuart, an entrepreneur who had just sold his stake in a real estate development firm, had been eager to build a new home—until he visited an appliance store on a Saturday morning without an appointment. He was met with indifference and a sales associate who demanded to know his budget and the exact items he was looking for and then led him to products stacked in a dimly lit warehouse environment.

Sears had sold his previous company, a flooring-design center for home builders, to Home Depot, but with little knowledge of appliances or plumbing the pair set out in 2010 to reimagine the appliance retail experience from supply chain to delivery. Stuart's hypothesis was that they could create an environment where people

ETHAN PINES FOR FORBES

would be eager to come in "to dream, play and choose." To test the hypothesis, they built a store in a suburban San Diego industrial park. Auto body shops surrounded the store, but inside it had all the luxury elements they had imagined.

As the store gained traction in 2010, Sears and Stuart spent $8 million of their own money to build another store for the chain—then called Fixture Livings—at SoCo Collection, a high-end interior design center in Orange County. "If you want to do something cool and innovative, then put it where the people are," says Stuart. "That's the Apple and Tesla store model." The partners worked for four months with London-based architectural firm Fitch to design the location, but the behavior of actual customers continued to shape the early stores. For example, after seeing how shoppers loved to fiddle with water faucets, Pirch created a large circular sink where they could play with dozens of faucets at once.

Big-name suppliers like Miele and GE were skeptical. "It sounded very ambitious," says Nick Ord, president of Miele USA, who says he came to believe that the experience-driven retailing concept improves sales. "It wasn't just about pretty stores. When people have that 'Aha!' moment, then the question is not 'If we're going to buy' but 'What are we going to buy?' "

The concept is not completely new—some of Pirch's competitors, like Abt, a single high-end store in suburban Chicago, offer cooking demos as well—but no one has taken the performance as far as Pirch, which has hired chefs away from high-end restaurants to work full-time, hosting cooking lessons and daily demonstrations to show off appliances, such as the $7,999 Gaggenau steam oven and the $16,900 Wood Stone hearth pizza oven. And while homeowners sit in "Dream Rooms" to discuss plans with sales associates—Pirch calls them "lifestyle experience ad-

Jim Stuart (left) and Jeffery Sears bonded over their "horrific" experiences buying appliances.

The average shopper spends more than two hours at Pirch—even if she doesn't take a shower.

visors"—they're plied with free gourmet meals. On average, the chain says, shoppers spend more than two hours in its stores. Sears obsesses over Yelp reviews (three of the eight Pirch stores rate a perfect five stars), personally responding to negative comments within hours. And his phone number is posted prominently in most stores.

The cost of such service adds up, but Pirch, which does not display price tags prominently either online or in stores, sells $25,000 bathtubs and $7,000 wine refrigerators. With so many big-ticket items, the average transaction is more than $7,000, and an on-demand ordering model keeps inventory low. That said, Pirch says it sells its goods at the contractually mandated minimum prices set by appliance manufacturers, which means other retailers can't undercut Pirch and steal window-shopping customers. Pirch, says an analyst who follows the company, is banking on tremendous sales volume from high-end customers to pay for the full-time chefs and other services.

The company's headquarters in San Diego looks almost like a store, with its indoor kitchen, its pristine bathrooms and an outdoor garden with brand-name grills. To instill a customer-focused culture among employees, Pirch flies all new hires—from executives to custodians—to San Diego for a one-week training session that includes conversations about what "joy" means to them. Sears greets each new employee personally at the airport.

In its efforts to become a one-stop shop for homeowners and builders, Pirch has attempted to improve the entire shopping experience all the way through installation. "That Miele oven you buy is of no use to you until it's working," says Sears. Thus, he staffs a delivery and installation team at every location months before a new store opens—to ensure the same level of customer service around the country. "If it was just a pretty showroom without the service, it would be a lot less attractive," says Michael Reeves, a luxury home builder in southern California who says he had to go to multiple suppliers and installation companies before Pirch.

Last year Pirch raised $62.8 million—bringing its total funding to $127 million—from Catterton, known for its successful bet on Restoration Hardware. With its war chest Pirch plans to open stores next year in New York City and Austin, Tex. The three-story 32,000-square-foot store set to open next spring in a landmark building in New York's SoHo neighborhood will feature 22 fully operational kitchens and a private entrance for high-profile clients who want to meet with designers without attracting attention.

Such massive expansion costs represent a big bet for a company that is all-but-surely not profitable. Sears likes to call Pirch "a place to dream" when he's showing off $47,500 turquoise-blue French handmade La Cornue ovens. That's quite an expensive dream for his customers—and for his investors, too. *

FINAL THOUGHT

* *"Make your customers comfortable and they will give you their lives."*

—PAUL ORFALEA

TRENDING

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PERSON
RAJIV KUMAR
Dropped out of med school after deciding he could help more people as an entrepreneur. Today his wellness company, ShapeUp, has 130 employees and clients, including Boeing, Southwest and JPMorgan Chase.

ETHAN PINES FOR FORBES (LEFT); NICK MACCARTHY PHOTOGRAPHY

STARTUPS
"THE MARIJUANA SHOW"
There's now a *Shark Tank* for pot companies. More than 200 entrepreneurs applied for a chance to spend a season at Bud Camp—like boot camp—with $10 million at stake.

IDEA
NO MORE BUSINESS PLANS
Forget 'em, says Dave McClure, a VC and angel investor. He looks for functional prototypes, customer development and scalability—and says 80% will fail anyway.

Appetite for Activism

Hedge fund agitators are all the rage, but when it comes to shaking profits out of restaurant stocks, few have the chops of Chicago's Patrick Walsh.

BY ANTOINE GARA

In the increasingly crowded world of flashy activist hedge fund managers, Patrick Walsh, 39, plays against type. The founder of the $150 million PW Partners in Chicago wasn't schooled at Wharton and has no Ivy League pedigree or M.B.A. He didn't apprentice with hedge fund greats like Carl Icahn, Dan Loeb or Bill Ackman, and he eschews the public spats that make activists a favorite of the news media. He's got no public relations handler or even an in-house trader to execute his stock moves.

Walsh is a DIY activist. When he targets a new company, typically a restaurant where growth has petered out, his prescription isn't just financial engineering. He relishes the opportunity to roll up his sleeves and offer new ideas to management for cutting costs and improving operations.

That's why FORBES is riding shotgun with him in a white Honda Civic Zipcar along 52nd Street in New York. We've just returned from a visit to one of his targets, a recently opened BJ's Restaurant & Brewhouse in Nanuet, N.Y. Walsh is dawdling through Manhattan engrossed in a discussion of investing strategy. A crimson GMC van starts blaring its horn at our slow-moving vehicle. As the van driver pulls ahead from the right he pauses to shout profanities in Walsh's direction before speeding off toward Fifth Avenue. Walsh doesn't skip a beat. "I think you want to focus on per-share value," he says, without acknowledging the minor melee he created. "It's not about trying to build an empire for the sake of it."

At BJ's we had devoured a many-thousand-calorie lunch of craft lager (brewed on the premises), Santa Fe rolls, pizza with chicken and Alfredo sauce, and bacon cheeseburgers. Walsh was adamant about trying his favorite dessert: a Frisbee-shaped, 2-inch-deep concoction of baked marshmallow fluff, chocolate chip cookie and ice cream called a "Pizookie," which he was unable to finish.

The feast was designed to give insight into one of Walsh's top-performing investments, the quick turnaround of California-based BJ's Restaurants. Walsh is on the board of the Huntington Beach company, an expanding chain of 159 restaurants with $845 million in annual revenues. He bought a 5% stake at an average price of $30.41 a share in early 2014, after BJ's growth had slowed, exposing operational inefficiencies that cut into margins. Then he approached management with a cost-saving plan endorsed by fellow activist fund Luxor Capital in New York City.

BJ's CEO, Greg Trojan, says Walsh's attention to detail and lack of ego won him over. "There's a brand of folks who always think they are the smartest guy in the room," he says with a heavy-handed reference to most Wall Streeters. "Patrick is not in that category."

Initially Walsh raised concern about BJ's marketing spending, which nearly doubled to $17 million in 2013 even as same-store sales fell 1% and profits 33%. It was part of a process to simplify BJ's menu and improve kitchen efficiency through the rollout of its Brewhouse Burger, a 5-ounce patty with extravagant toppings selling for less than $10. Walsh became convinced that Trojan's new streamlined-menu strategy would speed up kitchen turnaround times, and he dropped his concerns. Marketing

To hedge fund manager Patrick Walsh, activism is all about gaining a deep understanding of his target's products.

DAVID YELLEN FOR FORBES

rose to $19.5 million in 2014.

"It gave me great comfort even early on that he was thoughtful and would listen," says Trojan, who attributes much of BJ's $150 million share repurchase program to Walsh's advice, and further credits the activist with giving focus to a cost-saving plan, which increased restaurant margins.

BJ's shares now trade at $50, up 55% since Walsh took a seat on the board in June 2014. In the first half of 2015 revenues increased 7.5%, and margins gained 230 basis points, helping to nearly double earnings per share.

BJ's isn't the only restaurant where Walsh has made a big mark.

In 2010 he led a group that built a 7% stake in Denny's and narrowly lost a proxy war to change management. Walsh cashed out after a bruising fight, with gains of more than 50% in under a year. He then targeted Red Robin Gourmet Burgers, building a 13.5% stake and negotiating a board seat in 2011. He uncovered $20 million in savings and exited up nearly 80% in under a year. Great trades for Walsh, but he learned a hard lesson about leaving money on the table. Denny's stock has quadrupled and Red Robin's has nearly tripled since he sold out.

Famous Dave's of America has doubled since Walsh took a 10% stake in late 2012. In his first year as a director operating cash flow rose 66%. Trading profits have been stellar—he sold 45% of his stake in June for a 280% gain—but he's hanging on to the rest. Says Walsh: "The big money is made over the long term. I realized that with Red Robin."

Once he's inside the boardroom, Walsh's playbook calls for finding small savings that add up—from turning air conditioners off at night to changing trash pickup schedules and simplifying menu items. At Red Robin it was about buying whole avocados, instead of presliced, and then slicing them in-store. For BJ's, he found savings across nonfood items like trash bags, tablecloths and dishwasher fluid.

As a BJ's board member he eats for free at the company's restaurants and takes his wife and three young daughters to BJ's as much as possible to gauge store traffic and chat with employees. He will even ring CEO Trojan, alarmed, if waiters don't try to sell him or his kids the Pizookie dessert.

Given Walsh's relatively small size among activist hedge funds, he has deftly formed alliances with larger and more prominent players. In addition to Luxor, Walsh worked with New York's $2 billion HG Vora in 2012 when he challenged Apollo Global's $5-a-share buyout offer for Great Wolf Resorts of Madison, Wis., an operator of water parks and hotels. The private equity giant's eventual offer of $7.85 earned an 80% return for Walsh and company in a matter of months. In his latest investment, in Del Taco of Lake Forest, Calif., Walsh raised tens of millions of dollars from various funds after Larry Levy, a Chicago restaurant and food-service maven, tapped him to help buy control of the

promising Mexican fast-food chain. His fund is already up 80%, before fees.

Since he formed PW Partners in 2012 the only portfolio loss Walsh has had is a 10% stake in Town Sports International, the parent company of the New York Sports Clubs, which he purchased in August 2014. NYSC continues to struggle to compete with Planet Fitness and SoulCycle, and shares are down 60% so far this year. But Walsh recently won a shareholder campaign alongside established funds like Farallon Capital to replace its board. In June he was named executive chairman.

The son of an accounting partner at KPMG and a homemaker, Walsh grew up in Foxboro, Mass. His interest in investing stems from a fateful elevator ride with Warren Buffett in 1995 as a 19-year-old summer intern in the accounting department of Gillette.

Buffett was on Gillette's board, but the Oracle of Omaha wasn't on Walsh's radar. A colleague had to tell him he'd ridden with America's greatest living investor. Intrigued, Walsh bought Roger Lowenstein's Buffett biography, *The Making of an American Capitalist,* and quickly became obsessed. He's read every Berkshire Hathaway annual report and become a regular at the company's shareholder meetings, even dragging his wife along.

The elevator ride also caused Walsh to plot out a methodical path into money management, with the goal of venturing out on his own. After graduating from Boston College in 1998 with a degree in accounting, Walsh did a three-year stint in Atlanta, where he worked in real estate private equity for Prudential Capital and earned a C.F.A. He then spent a half-dozen years on Wall Street, first as an analyst of REIT and lodging stocks before moving into investment banking at Deutsche Bank, where he rose to vice president and worked on the $39 billion buyout of Equity Office Properties.

Without any blue-blood connections, Walsh used a strong work ethic and an affinity for sweating the financial details to make himself a "go-to guy" on complex deals, says Devin Murphy, former head of Deutsche Bank's real estate investment banking group. But Walsh's true passion was investing.

So in February 2008 Walsh cashed his $400,000 bonus check and took an 80% pay cut to join Chicago-based hedge fund Oak Street Capital to begin building an investing track record. Within a few years he was running his first activist deals, leading to Denny's in early 2010 and then to Red Robin.

With a number of winning deals in his quiver and a growing family at home, Walsh formed PW Partners four years later in 2012 with $1 million in savings as well as money from friends, colleagues and investors.

Like most other hedge funders, Walsh thrives on gaining intimate knowledge of his targets and is obsessive about finding companies he feels are cheap on a cash-flow basis. Most of his $150 million in assets comes from the appreciation of his investments. He is currently on a quest to get bigger fast, in part because hedge funds of $1 billion or less barely make the radars of most institutional investors. He recently hired a COO and expects to hire one analyst this summer.

Despite his initial successful run investing in restaurant stocks, Walsh knows he must expand beyond the proverbial kitchen. Town Sports, the owner of 158 sports clubs, will be a litmus test for Walsh as an activist-operator. After years of price cuts, the company has disappointed Wall Street with low membership growth and falling revenue. Competitors like discount gym Planet Fitness and niche players like SoulCycle and Blink are eating into its market share. "Traditional gyms left in the middle are finding it harder to compete," says analyst John O'Neil at Imperial Capital.

"I've met with 120 of our general managers over the past few weeks," says Walsh, who rattles off a list of marketing gaffes at the company, including the lack of any social media strategy.

"It's about empowering them. In the past they have been told what to do," says Walsh. "I am saying you are the individual CEO of your unit, and you should run it like a small business."

Walsh's words of encouragement shouldn't be confused for a new, hands-off approach. If his track record is any indication of what is in store for Town Sports, you can be sure that Walsh will be spending a good deal of time in the gym working off his Pizookies.

FINAL THOUGHT

"Trifles make perfection, and perfection is no trifle." —MICHELANGELO

TRENDING

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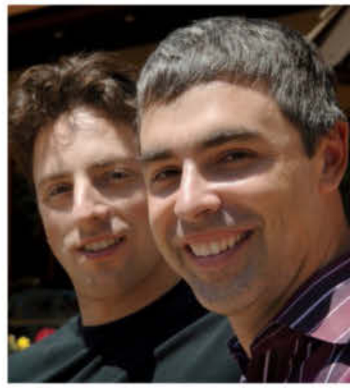


MATTHEW STAVER / BLOOMBERG NEWS

PEOPLE
LARRY PAGE AND SERGEY BRIN
Google dudes each get $4 billion richer in a day, thanks to search giant's strong profit report.

COMPANY
LIFELOCK
Identity-protection and cybersecurity company's stock crashes after FTC says it violated terms of 2010 settlement over false claims about customer protection.

IDEA
BEHIND CHINA'S EQUITIES MELTDOWN
Overvaluation warnings come to fruition, but market collapse doesn't necessarily portend a rough Chinese recession.

The Retirement Black Hole

Most investors are focused on their retirement assets, not their retirement liabilities. Big mistake.

BY WILLIAM BALDWIN

Fueled by low interest rates, stock and bond prices have been kind to savers in recent years. But don't sit back and admire your fat 401(k) balance. That same depression in rates is killing you on the other side of your balance sheet.

We're talking about the cost of funding a retirement income stream. You probably know that this liability is big. But if you are like most investors, you don't know how to calculate the number, and you don't have a clue about what kind of roller coaster it has been on.

Did you think 2014 was a good year? The overall bond market delivered a 6% return, big-company stocks 13.5%. But if you are now 60, your retirement liability shot up 28% in those 12 terrible months. You got poorer.

What happened? Funding a steady cash flow in retirement is like buying a collection of zero-coupon bonds due in each year of your remaining life. When rates fall, as they did last year, prices of zeroes go up.

Says Chip Castille, a retirement expert at BlackRock: "The cost of retirement is the most volatile thing on [a saver's] balance sheet."

In olden times employers had this hot potato. The obligation to pay pensions was sometimes big enough to sink a company. It kept financial officers awake at night. And so they came up with a way to sleep better. They offloaded the liability on employees, replacing volatile pension contributions with predictable 401(k) matches.

Now you get your quarterly retirement account statement, showing assets. Not shown: the liability number. That's a big omission.

BlackRock is there to fill the gap. It publishes a series of "cost of retirement indexes" for savers aged 55 to 74. The Cori for someone born in 1955 calls for having $17.65 on hand now to fund each dollar of annual retirement income that is to begin in 2020.

That makes sense. Invested in long-term

DOUGLAS B. JONES FOR FORBES

bonds, your $17.65 will grow in five years to about $20. When you turn 65 you use this money to buy an annuity that starts out at $1, kicks up every year by a modest amount to keep up with the cost of living and stops when you die.

Behind the Cori numbers lies a lot of arithmetic having to do with bond yields and mortality rates. But the fluctuating index number is supposed to converge, as the saver approaches 65, on the cost of a commercial annuity. Indeed, New York Life quotes 65-year-olds annuity prices close to $20 per dollar of annual income, if you opt for a 2% annual step-up. (Women pay somewhat more, men less.)

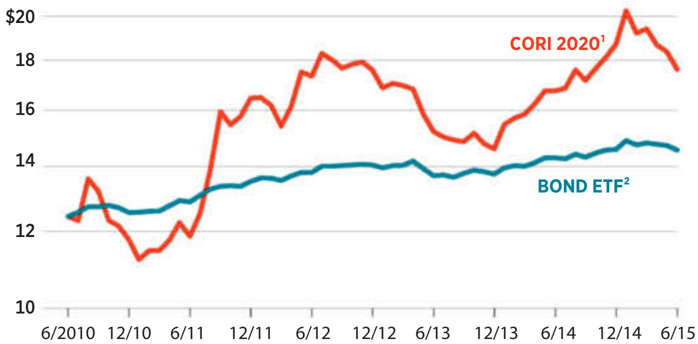
So let's say you're 60 and want a monthly income that starts in five years at $5,000, bumps

up to $5,100 in the next year, and so on. Multiply $60,000 by $17.65. You should either have $1 million set aside now or else have most of that dough plus a plan to top off the account in your remaining work years.

These are scary numbers. What does Castille want you to do about them? The first thing is to wake up and hear the alarm. After you turn 55, pay as much attention to your retirement liability as you do to your retirement assets. A bad year, like 2014, should inspire you to save more or plan a later departure from the workforce.

MISMATCH

IN FIVE YEARS THE COST OF BUYING $1 OF ANNUAL ANNUITY INCOME THAT STARTS IN 2020 HAS GONE UP 42%. AN INVESTMENT IN A BOND INDEX FUND WOULD NOT HAVE KEPT PACE.



[1]COST OF RETIREMENT INDEX, RECONSTRUCTED FROM HISTORICAL DATA. [2]CUMULATIVE TOTAL RETURN ON ISHARES CORE U.S. AGGREGATE BOND ETF, INDEXED TO STARTING VALUE OF CORI. *SOURCES: BLACKROCK; FORBES.*

The second response takes a leap of faith. It's not right for everyone. It's to reduce your exposure to interest rate changes by buying long bonds.

Yikes. Aren't long bonds the riskiest ones? Yes, if you look at them in isolation. But not if you pair them with your liability.

Go back to 2014. If our hypothetical preretiree, born in 1955, had been invested in a bond index fund, he or she would not have had a prayer of keeping up with the rising liability, even with new contributions adding to the balance. But if the saver had thrown some long bonds into the pot, there would have been no cause for panic. The Vanguard Extended Duration Treasury ETF (ticker: EDV) was up 45% that year.

Yes, those long bonds fall fast when rates go up, as they have done since February. But your cost of retirement falls with them.

"When you buy a long-duration instrument you are protecting your portfolio against the liability, but it's a high-risk asset," says Castille. "If interest rates go up you're likely to lose account value. That's hard to do."

Back in the day when corporate treasurers had to worry about pensions, they would try to match the duration of pension assets with the duration of pension liabilities. Duration is a measure of how long you wait for a cash flow.

The duration of BlackRock's iShares Core U.S. Aggregate Bond ETF (ticker: AGG), which covers the whole high-grade bond market, is 5.3 years. The duration of a 60-year-old's pension liability is three times as high. Result: A buyer of AGG would have fallen far behind over the past five years (*see chart*).

Calculating a pension duration is a tricky affair. But you can get a fair assessment of it this way. Suppose you are now 60 and destined to live to 85. Then your pension payments begin in 5 years and end in 25. Your average waiting time would be 15 years.

The escalator built into BlackRock's formulas kicks up the duration number a bit. Also contributing is the fact that annuities are priced for especially healthy buyers.

If logic is on the side of lengthening bond maturities, emotion is not. BlackRock has a series of long-term bond funds designed to keep pace with retirement liabilities. A 60-year-old, for example, could buy a blend of the Cori 2019 and Cori 2021 portfolios.

Someone who held those funds would have enjoyed nice returns in 2014. But this year, with rates up, the funds are doing badly. Evidently preretirees are more sensitive to losses on the asset side than to hazards on the liability side. BlackRock, with $4.7 trillion under management, has managed to collar only $11 million for Cori 2021. *

FINAL THOUGHT

* *"People always live forever when there is an annuity to be paid them."*

—JANE AUSTEN

EQUITY PLAYS

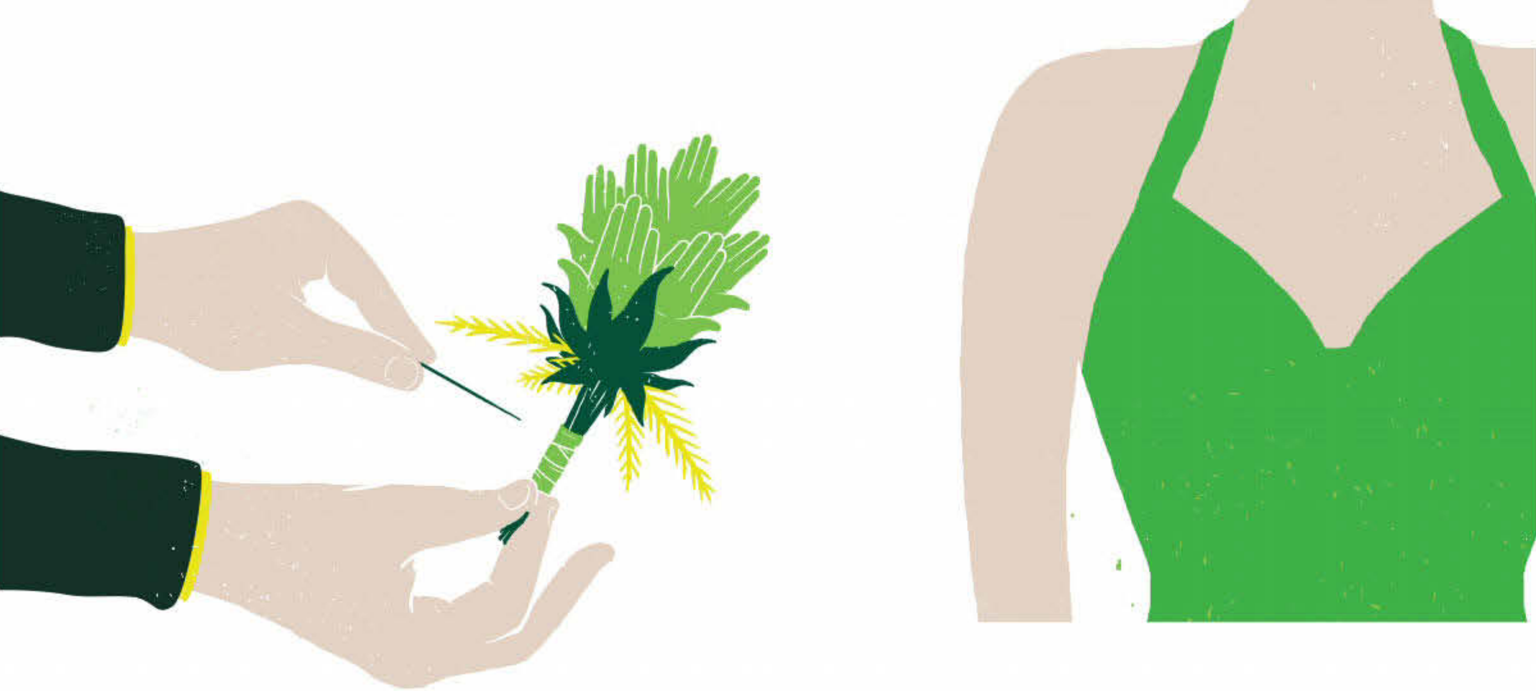
MARK ELIAS / BLOOMBERG

IF THEY BUILD IT ...

Home builders' stocks are on a tear, and recent home-sales data suggest the bull market in builders has room to run: The Dow Jones U.S. Select Home Construction Index was up 5.2% year-to-date through July 24, better than double the 2.1% move for the S&P 500. The pace of new-home sales in June was up 18.1% from a year ago, with a median price of $281,800.

Two ways to play the ongoing rebound: The biggest builder by market cap, Miami-based LENNAR, is expected to have sales growth of 21% this year, with earnings per share up 16% from 2014. At 15.6 times earnings, Lennar is cheap, and so is luxury builder TOLL BROTHERS, currently trading at 17.8 times earnings with 15% per-share earnings growth.

—John Dobosz



KEN FISHER // PORTFOLIO STRATEGY

FIVE WAYS TO WIN FROM MONEYLOSERS

"ALWAYS" IS ALWAYS a dangerous word in investing, but here's a good time to use it: Always own some stocks of profitless good firms. Some are turnarounds. Others fund growth through legally deductible futuristic expenses that mask profitability while avoiding taxes. Both needlessly confuse and scare off most investors, who are guided solely, mostly or too much by earnings.

As a result, these underappreciated firms get bid up as they otherwise progress in the real-world marketplace. When I had nothing and had nothing to lose, these were the only kind I bought. While you don't want profitless bad companies, of course, the profitless good firm is a beautiful thing to behold.

Case in point: I last recommended **AMAZON (AMZN, 482)** in January 2013 at $258. This July, on the 24th Forbes Cruise for Investors, I was asked how it can be worth more than $200 billion yet never earn material profits? First, if it did, it would pay material taxes. Why are taxes good? Second, it still self-funds strong sales growth with an okay balance sheet. Third, it's at only 2.5 times revenue, cheap for any real growth stock.

But the killer? More and more it simply dominates retailing. Whatever it is, if it isn't on Amazon you probably don't need it (except securities—and probably even them soon). Don't believe me? Try searching for bizarre esoterica you expect only in a niche specialty store far, far away. Profits later; dominance now! Amazon is an "old tech" name yet merely 21 years young, barely drinking age. As such, this huge category killer fits perfectly into my vision of "old tech" leading this bull market's golden years.

ALWAYS OWN SOME STOCKS OF PROFITLESS GOOD FIRMS

So do I just have my head in the clouds? Well, surely for **SALESFORCE.COM (CRM, 72)**. It's a perfect pure play on the cloud, providing enterprise cloud-computing solutions for business. I first recommended it at $33 in April 2011. It has compounded more than 20% a year since while never really earning any money. That should continue as its customer relationship management (CRM) technology and "software as a service" keep gaining credence. For those value-prone: Its price-to-revenue ratio is now far less than what it was when I recommended it in 2011.

So if Amazon has everything you need, why am I for the first time recommending **TARGET (TGT, 82)**, America's third-largest discount retailer? After all, it is losing money and up against Wal-Mart; discount margins are thin in the best of times. Am I just nuts? Well, I'm crazy for solid turnarounds. Yes, Amazon is changing everything, but as behaviorists teach us, people are slow to learn, and Target didn't get to be number three in a tough turf for no reason. It has great locations and great merchandising. It has been trimming and toughening. And I think it will earn $5 billion in two years. By then the stock should be up 50%. You get a 2.5% dividend yield while waiting.

Another real moneyloser I like lots is Ireland-based drug giant **ALLERGAN (AGN, 315)**. I recommended it just three months ago at $283, urging you to buy before its name changed from Actavis—but I'm doubling up here now as Allergan. It's incorrectly viewed by institutions—too much owned by passive funds and not enough by traditional active ones (which, as they gain confidence in it, should bid up the price). And where it is owned by active institutions it is mostly as an alternative to generic drug firms. My bet is before this bull market ends it's treated more like mainstream proprietary druggies and is nicely higher.

I'm also recommending the U.K.'s **BARCLAYS (BCS, 17)** for the first time ever. It hasn't made any reasonable money in years. Stagnant sales! Flat stock—just where it was five years ago, half of ten years ago! And it's been accused of darned near everything shy of being an actual terrorist cell. I like that. Expectations are negligible—just as the company now actually, by my reckoning, rights its ship. Once results are in, it will be too late.

THOMAS KUHLENBECK FOR FORBES

MONEY MANAGER KEN FISHER'S LATEST BOOK IS *BEAT THE CROWD* (WILEY, 2015). VISIT HIS HOME PAGE AT WWW.FORBES.COM/FISHER.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TEACHER LED.
CROWD FUNDED.™
Think It Up is a new movement created to inspire students to pursue their passions through student-powered, teacher-led learning projects in classrooms across the country with support from Staples for Students.
Students and teachers: How can you spark great learning experiences in your classrooms today?
Think It Up - because the work that students and teachers accomplish today will change our world tomorrow.
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WILLIAM BALDWIN // INVESTMENT STRATEGIES

THE DO-IT-YOURSELF $3,000-A-MONTH PLAN

DO YOU NEED a steady flow of cash from your portfolio? Vanguard has a pretty good deal for you. I have a better one.

The product Vanguard wants you to buy is its Managed Payout fund. This cocktail of stocks, bonds and commodities delivers a nice monthly distribution—a bit more than $3,000 a month on a $1 million stake.

Dividend and interest yields are pretty meager these days, so in order to come up with your monthly check Vanguard has to sell off a few securities. Offsetting these asset sales is the appreciation on the stocks, in which the fund is a net 63% invested.

Over time you may reasonably hope your $1 million will not shrink too much, although it will suffer some tumultuous swings. Managed Payout's share price got killed in 2008. Then it came back to life. If all goes well, Vanguard will be able to boost your paycheck over the years, almost keeping up with the cost of living.

What's not to like? Two things.

The first is the portfolio. Managed Payout has a fifth of your money in "minimum volatility" stocks—sleepy issues like Galenica (a Swiss drug firm) and Clorox. This part of the fund has done well over the past year, but so what? Low-vol investing is a fad.

CUT YOUR PORTFOLIO-MANAGEMENT FEE BY $2,100

A tenth is in a "market neutral" fund. The concept here: You buy stocks that go up while shorting stocks that go down, thereby making money in both bull and bear markets. Lovely idea, except that everyone on the planet is trying to buy stocks that go up and sell stocks that go down. A fair expectation for the real return from market-neutral investing is 0%. You don't need this.

Besides the asset mix, I have to quibble with Managed Payout's price tag. Not counting some borrowing costs buried in that market-neutral poker game, the fund has an expense ratio of 0.29%, or $2,900 a year on a $1 million investment. You can do better. Create a home brew out of Vanguard ingredients—its cheap index funds—and you can get your cost down to $780 a year.

The do-it-yourself portfolio starts with a 35% allocation to the Vanguard Total Stock Market fund and 20% to the Vanguard Total International Stock fund.

Now put 25% in Vanguard Total Bond Market. This fund is heavily weighted to shorter-term bonds. Stretch out DIY's maturities by adding a 15% allocation to Vanguard Long-Term Bond. Yes, long-term bonds are risky, but the risk matches the risk built into what you are trying to underwrite, which is a stream of income lasting several decades.

Managed Payout goes global with its bonds. But that means accepting miserable yields in Europe and Japan. My allocation to foreign bonds is 0%.

The Managed Payout fund directs 5% of your money to a Deutsche Bank commodity index. It's not a bad idea to have an inflation hedge, but you don't have to pay a bank to get one. Instead of owning futures, own profit-making, dividend-paying commodity producers. Buy twin $25,000 stakes in Chevron and BHP Billiton.

My portfolio generates $27,000 a year in interest and dividends. So to get your monthly check, you'll have to sell $9,000 of positions annually. Don't be dismayed. That's a considerably slower pace of sales than Managed Payout is currently forced to undertake.

My estimate of the long-term real return on Managed Payout is 3.2% a year, which is a little shy of your draw-down rate. I expect 3.6% from Do-It-Yourself. With the latter you have a better shot at keeping up with the cost of living and leaving behind the original principal for a spouse or another heir.

If your money is at Vanguard, use its mutual funds to build the core of your DIY fund. If it's elsewhere, use the exchange-traded share classes of those Vanguard funds. Tickers for the ETFs are **VTI**, **VXUS**, **BND** and **BLV**; for the stocks, **CVX** and **BHP**.

THOMAS KUHLENBECK FOR FORBES

GO TO FORBES.COM/SITES/BALDWIN FOR MORE ON TAX-WISE INVESTING STRATEGIES.

GET READY FOR THE FUTURE OF NONDRIVING

THE BIGGEST CHANGE to the automotive business in generations is upon us. Tesla Motors is on the verge of taking its autopilot system, which allows hands-free driving on the freeway, live on new Model S vehicles. Thanks to a sensor array, including radar, a forward camera and 360-degree ultrasonics, the system will also enable autoparking.

This is a milestone moment for autonomous vehicles as ever declining sensor-hardware costs, richer software code and growing awareness of the safety and productivity benefits bring another technology out of the realm of science fiction. The future of driving, which is ironically nondriving, is finally here.

For investors, it's still early innings. The Boston Consulting Group estimates driverless cars could make up 10% of global vehicle sales by 2035, worth about 12 million cars per year, while the market for driver-assistance systems could be $42 billion by 2025.

Consumers are ready: 44% of U.S. drivers would consider buying a fully autonomous vehicle within the next decade, while 20% are willing to pay an extra $5,000 or more for the luxury. The critics have long drummed about the technological, legal and regulatory challenges.

BUY THE ENABLERS OF AUTOMATED DRIVING, NOT TRADITIONAL SUPPLIERS

While these remain, a more compelling factor is driving innovation. Road accidents are the eighth leading cause of death globally, with 95% of road accidents caused by human error.

Xavier Mosquet, who leads BCG's Global Automotive Practice, puts the total cost to society of road incidents in the U.S. at $948 billion per year, or 6% of GDP. That includes the direct cost of damage to vehicles and acute health treatment as well as the lingering cost of disabilities. Environmentalists are excited about the impact driverless taxis could have on air quality and congestion in cities.

Legal worrywarts don't seem to have a case. According to data compiled by Bryant Walker Smith at Stanford University, automated vehicles are already "probably legal" in the U.S.; we're talking computer direction of steering, braking and accelerating without human input. It's a brave new world in which autonomous cars could become more computer than mere vehicle. This gives technology and consumer electronics companies like Google and Apple a way in. The market is gigantic: According to Morgan Stanley, annual new-vehicle sales total $1.6 trillion, versus $400 billion for smartphones and $266 billion for PCs.

How soon will all this happen? Way sooner than you think.

Ford Chief Executive Mark Fields expects fully autonomous vehicles within the next five years. Stefan Moser, head of product and technology communications at Audi, announced that the next-generation A8 would have full autonomy by 2017. Tesla Chief Elon Musk expects automated driving by 2023.

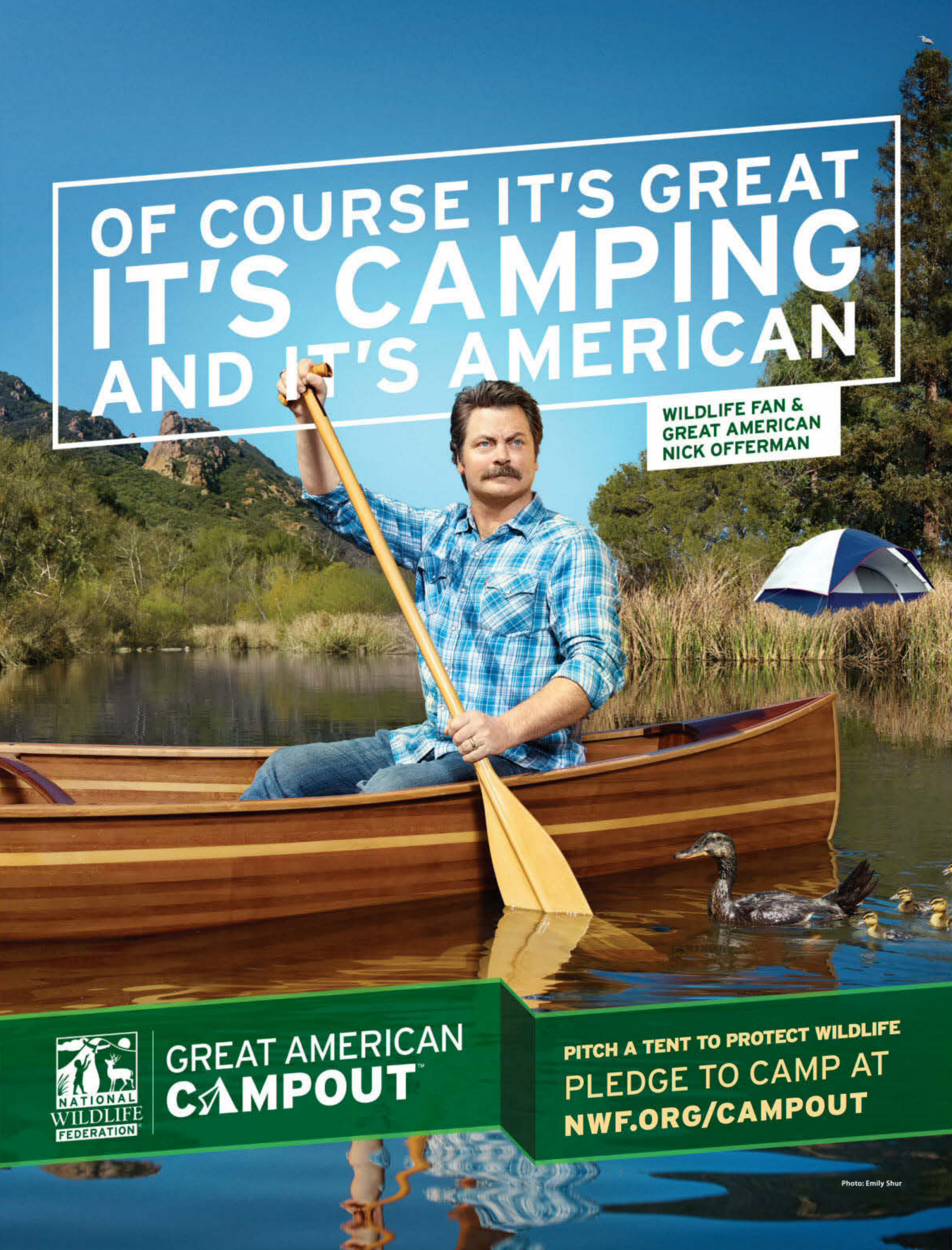
Automated vehicles could dampen overall demand for vehicles due to ride-sharing, with Barclays Capital estimating that car ownership rates could fall by almost half over the next 25 years. So it will be companies like Israel-based sensormaker **MOBILEYE (MBLY, 59)** and high-definition camera and software maker **AMBARELLA (AMBA, 120)** that enable autonomous driving and provide the best exposure to this sea change—rather than traditional OEMs like Delphi.

Mobileye is an Israeli developer of mobile vision and sensor packages used to power pedestrian collision warning systems, lane departure systems, forward collision warnings, intelligent high-beam systems and speed-limit indications. It provides software and system-on-a-chip hardware—helping cars translate the digital noise of a video signal into useful information. Ambarella, discussed in my Sept. 8, 2014 column, just purchased an Italian computer vision and autonomous vehicle tech developer, which includes 27 specialized researchers.

Autonomous vehicles will be one of the most important tech developments of our lifetime. Don't get left standing at the curb.

THOMAS KUHLENBECK FOR FORBES

JON D. MARKMAN IS PRESIDENT OF MARKMAN CAPITAL INSIGHT, AN INVESTMENT RESEARCH FIRM BASED IN SEATTLE.



OF COURSE IT'S GREAT
IT'S CAMPING
AND IT'S AMERICAN
WILDLIFE FAN & GREAT AMERICAN NICK OFFERMAN
NATIONAL WILDLIFE FEDERATION
GREAT AMERICAN CAMPOUT™
PITCH A TENT TO PROTECT WILDLIFE
PLEDGE TO CAMP AT
NWF.ORG/CAMPOUT
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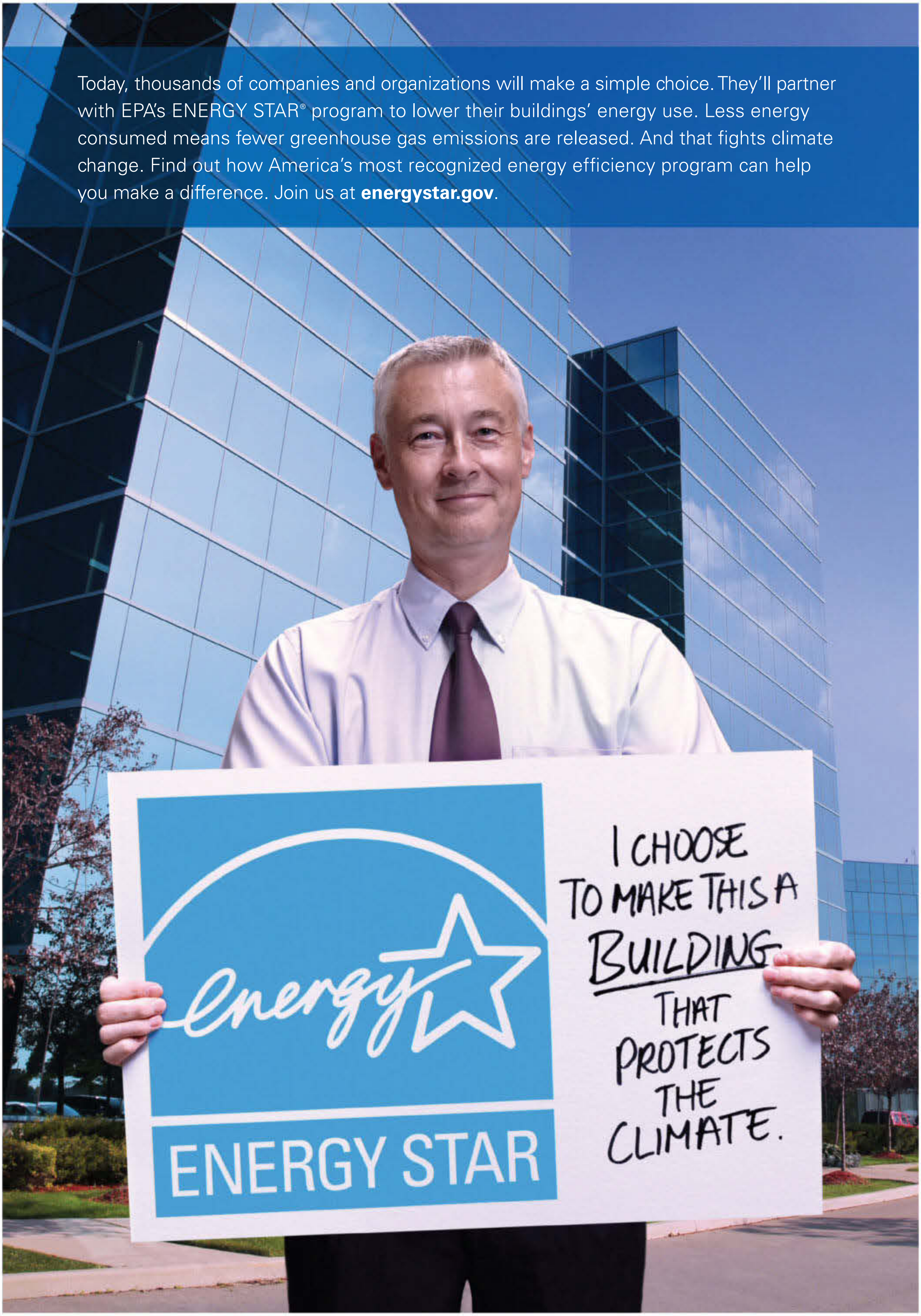
Today, thousands of companies and organizations will make a simple choice. They'll partner with EPA's ENERGY STAR® program to lower their buildings' energy use. Less energy consumed means fewer greenhouse gas emissions are released. And that fights climate change. Find out how America's most recognized energy efficiency program can help you make a difference. Join us at **energystar.gov**.
energy
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I CHOOSE TO MAKE THIS A BUILDING THAT PROTECTS THE CLIMATE.

Features August 17, 2015

What makes a top college? The wherewithal to attract top students (and speakers like Facebook's Sheryl Sandberg)—and then offer them a great return on their family's substantial investment. See our definitive school rankings, plus a colorful portfolio from FORBES' #MyTopCollege contest, academia's top student-led social media campaign.

PAGE 75

Revenge of the Philosophy Majors

In Silicon Valley brilliant coding and engineering is a given. The real value added, increasingly, comes from the people who can sell and humanize. Which is why tech startups suddenly crave liberal arts majors.

BY GEORGE ANDERS

In less than two years Slack Technologies has become one of the most glistening of tech's ten-digit "unicorn" startups, boasting 1.1 million users and a private market valuation of $2.8 billion. If you've used Slack's team-based messaging software, you surely recognize that one of its catchiest innovations is Slackbot, a helpful little avatar that pops up periodically to provide tips so jaunty that it seems human.

Such creativity can't be programmed. Instead, much of it is minted by one of Slack's 180 employees, Anna Pickard, the 38-year-old editorial director. She earned a theater degree

CARLO RICCI FOR FORBES

Slack CEO Stewart Butterfield learned all he needed to know about knowledge-management software by reading Wittgenstein.

from Britain's Manchester Metropolitan University before discovering that she hated the constant snubs of auditions that didn't work out. After dabbling in blogging, videogame writing and cat impersonations, she found her way into tech, where she cooks up zany replies to users who type in "I love you, Slackbot." It's her mission, Pickard explains, "to provide users with extra bits of surprise and delight." The pay is good; the stock options, even better.

What kind of boss hires a thwarted actress for a business-to-business software startup? Stewart Butterfield, Slack's 43-year-old cofounder and CEO, whose estimated double-digit stake in the company could be worth $300 million or more. He's the proud holder of an undergraduate degree in philosophy from Canada's University of Victoria and a master's degree from Cambridge in philosophy and the history of science.

"Studying philosophy taught me two things," says Butterfield, sitting in his office in San Francisco's South of Market district, a neighborhood almost entirely dedicated to the cult of coding. "I learned how to write really clearly. I learned how to follow an argument all the way down, which is invaluable in running meetings. And when I studied the history of science, I learned about the ways that everyone believes something is true—like the old notion of some kind of ether in the air propagating gravitational forces—until they realized that it wasn't true."

Slack's core business benefits from the philosopher's touch. Hard-core engineers have been trying to build knowledge-management software for at least 15 years. Most of their approaches are so cumbersome that corporate users can't wait to quit. Slack makes everything simple. It bridges everything from Dropbox to Twitter, helping users organize documents, photos and data files into streamlined channels for easy browsing. Considering that Butterfield spent his early 20s trying to make sense of Wittgenstein's writings, sorting out corporate knowledge might seem simple.

And he's far from alone. Throughout the major U.S. tech hubs, whether Silicon Valley or Seattle, Boston or Austin, Tex., software companies are discovering that liberal arts thinking makes them stronger. Engineers may still command the biggest salaries, but at disruptive juggernauts such as Facebook and Uber, the war for talent has moved to nontechnical jobs, particularly sales and marketing.

"Studying philosophy taught me how to follow an argument all the way down, which is invaluable in running meetings."

The more that audacious coders dream of changing the world, the more they need to fill their companies with social alchemists who can connect with customers—and make progress seem pleasant.

Think of the ways the automobile revolution of the 1920s created enormous numbers of jobs for people who helped fit cars into everyday life: marketers, salesmen, driving instructors, road crews and so on. Something similar is afoot today. MIT professors Erik Brynjolfsson and Andrew McAfee argue in a recent book, *The Second Machine Age*, that today's tech wave will inspire a new style of work in which tech takes care of routine tasks so that people can concentrate on what mortals do best: generating creative ideas and actions in a data-rich world.

The Bureau of Labor Statistics predicts that by 2022 some 1 million more Americans will enter the workforce as educators. Another 1.1 million newcomers will earn a living in sales. Such opportunities won't be confined to remedial teaching or department store cashiers. Each wave of tech will create fresh demand for high-paid trainers, coaches, workshop leaders and salespeople. By contrast, software engineers' ranks will grow by 279,500, or barely 3% of overall job growth. Narrowly defined tech jobs, by themselves, aren't going to be the answer for long-term employment growth, says Michael Chui, a partner at McKinsey Global Institute.

Such nuances elude policymakers, who can't shake the notion that tech-centered instruction is the only sure ticket to success. President Barack Obama has repeatedly called for more spending on tech-focused high schools. In a February interview with the Re/code website, he hailed computer-programming classes as "a huge priority," adding: "It can't just be a handful of kids. It's got to be everybody."

In fact, people without a tech degree may already be benefiting the most from tech's boom. Some fascinating insights can be found on LinkedIn, which tracks graduates of specific universities as they move into the workforce. Say hello to the 62,887 LinkedIn members who attended Northwestern University in the past decade. Now zoom in on the 3,426 who have moved to the San Francisco Bay Area, one of the most popular destinations outside the Midwest, as they chase the Silicon Valley dream. Smart call: The Wildcats' top corporate employers include Google, Apple, Facebook,

ERIC MILLETTE FOR FORBES

Genentech and LinkedIn.

Surprisingly, only 30% of these migrants ended up in engineering, research or information technology. As LinkedIn data show, most of the migrants have created nontechnical career paths in Silicon Valley. The list starts with sales and marketing (14%) and goes on to include education (6%), consulting (5%), business development (5%) and a host of other specialties ranging from product management to real estate. Add up the jobs held by people who majored in psychology, history, gender studies and the like, and they quickly surpass the totals for engineering and computer science.

The job of a software engineer is getting more automated. What's far more labor-intensive is the job of figuring out what technology users want.

Run the numbers on recent graduates of Boston University, the University of Texas at Austin or any of the University of California campuses, and the hiring pattern in Silicon Valley is seen to be broadly similar. A case in point is Rachel Lee, who graduated from UC, Berkeley with a communications degree in 2011; now she's an account manager at Slack. She's been at the company for barely a month but she's already

OpenTable's Shawna Ramona, an English lit major, translates data in a way restaurateurs like Umberto Gibin can understand.

helped a construction company assimilate Slack's software to keep track of things as varied as plaster shipments and building regulations via employee smartphones. Lee says she's in awe of her technical colleagues who write Slack's code. They, in turn, respect her because of her untechnical ability to "connect with end users and figure out what they want."

IN AUSTIN SUZY Elizondo can see tech's new power structure every time she looks around the room during customer meetings. She has been working for five years at Phunware, which develops mobile applications for a wide variety of customers, including AT&T, the Houston airport and celebrity astrologers. When she joined the company as a design specialist after earning an advertising degree from UT Austin, she was the odd one out. Most meetings were packed with software engineers.

Now nontechnical people from clients and from her own company often occupy at least half the seats. The reason: Software development keeps getting more automated. The rise of content libraries and plug-in modules means that mobile apps can be built much faster, with fewer people. But the nontechnical side—getting everyone to agree on what an app should look like—is more labor-intensive than ever. That means endless meetings and revisions for Elizondo, who's now a creative director overseeing a seven-person department.

THE BEST 200

As far as we're concerned, the debate about whether U.S. higher education is worth the price is over when it comes to these outstanding colleges. We rate schools on an ROI scale, with points for low debt, high graduation rates, student satisfaction and career success. You'll also find letter grades for fiscal soundness and a ranking of alumni giving. *EDITED BY CAROLINE HOWARD*

ALL PHOTOS AND CAPTIONS SUBMITTED TO FORBES' #MYTOPCOLLEGE SOCIAL CAMPAIGN

1 Pomona College
Claremont, CA
Undergrad pop. **1,610**
Total cost **$62,632**
Grateful Grad Rank **26** • Financial Health **A+**

2 Williams College
Williamstown, MA
Undergrad pop. **2,096**
Total cost **$64,020**
Grateful Grad Rank **3** • Financial Health **A+**

3 Stanford University
Stanford, CA
Undergrad pop. **7,274**
Total cost **$62,801**
Grateful Grad Rank **15** • Financial Health **A+**

4 Princeton University
Princeton, NJ
Undergrad pop. **5,323**
Total cost **$58,965**
Grateful Grad Rank **1** • Financial Health **A+**

> **“It takes us about ten meetings to put one of these deals together, and only two of those meetings are about technology.”**

Mobile technology doesn’t only make life more convenient, observes Robert Tabb, a Phunware salesman who visits medical centers all year. Putting easy-to-use information on everyone’s smartphone also redefines a lot of people’s jobs. And that means lots of intense conversations about how big organizations should reconfigure themselves to handle these dislocations. Tabb sees this upheaval in action every time he approaches hospitals about installing mobile apps that guide patients toward their appointments, even if it’s not obvious which corridors lead from the lobby to Room C-713.

“It takes about ten meetings for us to get one of these deals put together,” Tabb says. “And only two of those meetings are about the technology.” The rest of the time Tabb earns his keep by practicing shuttle diplomacy. Early on, the patient-relations specialists love his idea, but the building engineers are dubious. Once the physical mapping issues are resolved, new tensions flare up regarding the prominence—or absence—of the medical center’s brand on the mobile app. Eventually everyone is happy, and the deal gets done.

Being able to read the room is such a crucial skill, adds Phunware sales executive Mike Snavely, that he’s willing to hire people who don’t know much about technology if they have a gift for relating to other people. It doesn’t bother him at all that Tabb started out selling running shoes or that Elizondo sells handmade jewelry at weekend crafts fairs as a hobby. Eccentricity, as least relative to the geeks coding all night in the back, sharpens people skills, he finds.

To be sure, the financial payoff of an engineering degree remains strong. A 2014 report by the American Association of Colleges & Universities found that engineering majors earned an average of about $92,000 a year in their late 30s, compared with about $61,000 for graduates with degrees in the humanities or social sciences. But strong social skills turn out to be just as important as brainpower in determining future earnings potential. Catherine Weinberger, an economist at UC, Santa Barbara, has been analyzing government data on thousands of high school students and the incomes they earn many years later. Among her findings: People with balanced strengths in social and math skills earn about 10% more than their counterparts who are strong in only one area. In fact, socially inept math

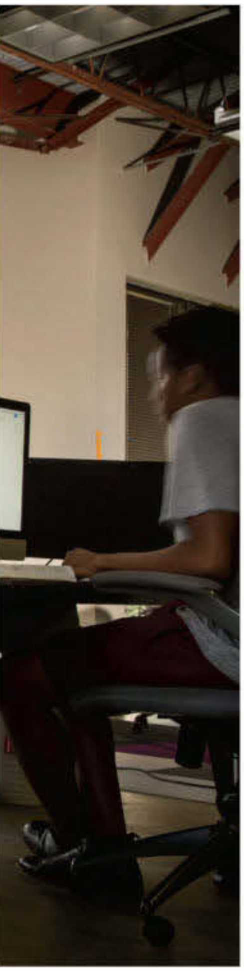
DARREN CARROLL FOR FORBES

Anyone can write mobile apps. Suzy Elizondo of Phunware connects with customers’ moods.

whizzes fare no better than go-getters who struggle with numbers.

Big tech employers are widening their hiring horizons beyond the STEM fields: science, technology, engineering and math. Larry Quinlan, Deloitte's chief information officer, argues in favor of "STEAM," in which the A stands for the arts. "It's not enough to be technologically brilliant," Quinlan says. "We need senior people who understand business processes, too."

This summer's fierce race to beef up sales teams is being played out every day in tech companies' hiring notices. Employee-software specialist Workday has 60 open positions in sales, exceeding the 51 in technology development. Ride-sharing king Uber needs 427 more brand ambassadors, partner-support reps and other operations wranglers, compared with just 168 more engineers. Even Facebook—run by die-hard engineer Mark Zuckerberg—has 225 openings right now for sales and business development specialists, compared with just 146 for software developers.

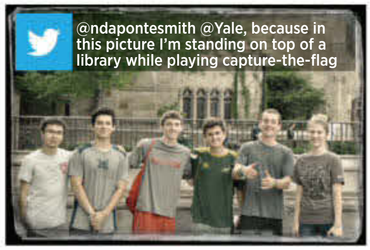


Bess Yount epitomizes the nontechie side of Facebook. She earned a Stanford bachelor's degree in communication and a master's in sociology. Outside the classroom she rounded herself out as captain of the lacrosse team. "I've always had a greater love for words than numbers," Yount says. That hasn't been a problem. When she joined Facebook in 2010, the social media company was evolving rapidly beyond its engineer-centric beginnings. Instead of envisioning a day when ads could be booked online without ever talking to a human being, Facebook's leaders began tapping into the benefits of a personal touch.

As a marketing manager focused on small businesses, Yount is on the road throughout the year, striking a rapport with shopkeepers who were raised on the Yellow Pages. She introduces them to a new era of advertising in which it's possible to target customers by age, gender, time of day, neighborhood and personal affinities. These bewildering new powers ("Should we target Rihanna fans? Taylor Swift fans? Both?") seem easier and more inviting in workshops that Yount runs all over the U.S. On a winter trip to the Berkshires, for example, she showed plumbers how to steer lots of ads into homeowners' news feeds right after a cold snap, so that people with frozen pipes would be likely to call.

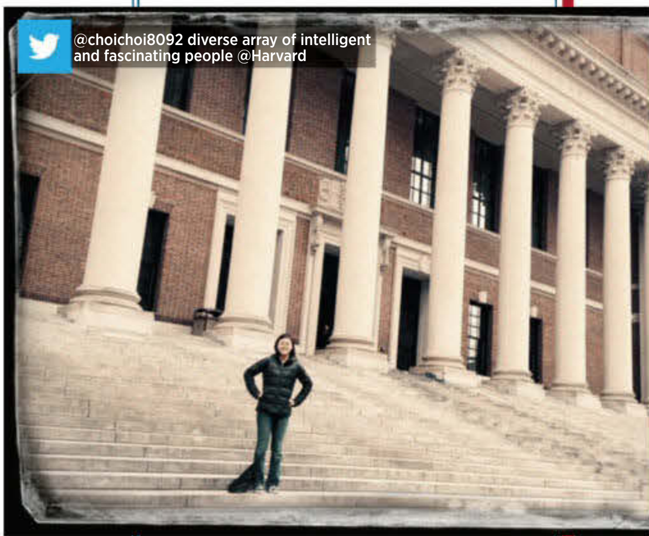
Such hand-holding isn't cheap. Facebook spent $620 million on sales and marketing in the first quarter of 2015, nearly double from a year earlier. But the payoff for restoring human contact has been vast. Facebook's ad business, which was tiny in the days when everything was automated, now tops $12 billion a year and is growing more than $1 billion a quarter.

Even tiny businesses can gain a lot from customized Facebook ads, Yount says, if she can just help them crack the code. At a recent Philadelphia conference she highlighted the ways that diner owners can photograph a freshly baked pie and then use geo-targeting to show that photo to anyone walking within a mile of the shop. "One woman who did that managed to sell every piece of pie within three hours," Yount says.



5 Yale University
New Haven, CT
Undergrad pop. **5,430**
Total cost **$63,970**
Grateful Grad Rank **14** Financial Health **A+**

6 Harvard University
Cambridge, MA
Undergrad pop. **10,534**
Total cost **$62,250**
Grateful Grad Rank **24** • Financial Health **A+**



7 Swarthmore College
Swarthmore, PA
Undergrad pop. **1,534**
Total cost **$62,450**
Grateful Grad Rank **20** • Financial Health **A+**

8 Brown University
Providence, RI
Undergrad pop. **6,455**
Total cost **$62,694**
Grateful Grad Rank **16** • Financial Health **A+**

IN THE RESTAURANT INDUSTRY, Shawna Ramona is the human face of the data revolution. She graduated from San Francisco State in 2002 with a degree in English literature. Now she is an iPad-toting "restaurant relations manager" for OpenTable, the online dinner-booking service. She calls on scores of restaurateurs a year, sharing insights that emerge from her company's data team. There's nothing technical in her background, but she knows how to connect with the old guard.

On a recent Tuesday she visited Umberto Gibin, the proprietor of two of San Francisco's most popular restaurants, Perbacco and Barbacco. He started in the restaurant trade 45 years ago as a teenage waiter in Italy, learning to carve ducks at patrons' tables. Panache defines him; when he bellows "Arrivederci!" to a departing guest, the whole restaurant can hear. His world is being rocked, though, by *Moneyball*-style insights culled from customers' smartphones, checks and online reservation data. Predictive algorithms can tell Gibin how long each guest is likely to linger and which bookings are the likeliest no-shows. "I'm trying to change with the times," Gibin says. "But I'm a dinosaur when it comes to technology."

Ramona makes the strain go away. She worked in restaurants for much of her 20s, helping manage everything from steak houses to sushi bars. She knows when to make small talk about radicchio and when it's time to circle a disappointing metric on her iPad before gently saying: "There's an opportunity here for you."

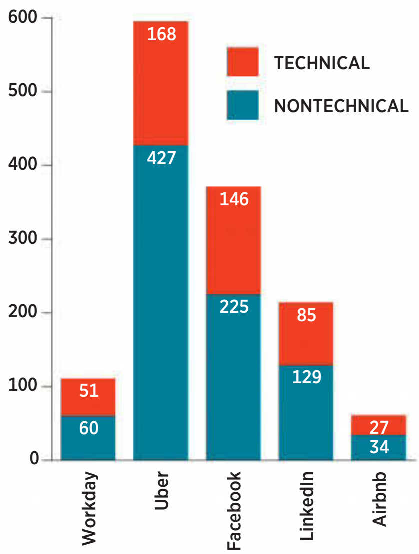
OpenTable is a case in point of how the tech sector has widened its horizons. In the late 1990s California chip engineer Chuck Templeton created OpenTable as a pure tech play: enabling anyone to book a meal reservation online, instantly. The general public loved his concept. Most eateries, however, lacked the scheduling software to make it work. So in 2000 OpenTable began putting muscle into building better information technology for restaurants.

Suddenly OpenTable needed salespeople. Years of selling helped OpenTable slip its software into more than 10,000 restaurants by 2008. That was a fragile triumph, however. OpenTable's engineers kept upgrading the company's seating systems and data analytics, only to discover that restaurateurs weren't paying attention. That created a greater risk of customer churn. If OpenTable wanted strong, lasting connections with restaurant managers and owners, it needed a second team of frontline relationship-builders.

So OpenTable executives began hunting for people who had waited on tables, tended bar or managed restaurants earlier in their careers. The company was moving beyond its beginnings as an automation tool. The new priority, as sales chief Mike Dodson explains, was to find or train evangelists who could "show how tech can enrich the

THINKERS, NOT CODERS

CURRENT JOBS NEEDING TO BE FILLED AT SOME OF THE BIGGEST FIRMS.



THE BEST 200

9 Amherst College
Amherst, MA
Undergrad pop. **1,785**
Total cost **$64,006**
Grateful Grad Rank **5** • Financial Health **A+**

10 Massachusetts Institute of Technology
Cambridge, MA
Undergrad pop. **4,528**
Total cost **$61,030**
Grateful Grad Rank **17** • Financial Health **A+**

11 United States Military Academy
West Point, NY
Undergrad pop. **4,591**
Total cost **$0**
Grateful Grad Rank **N/A**

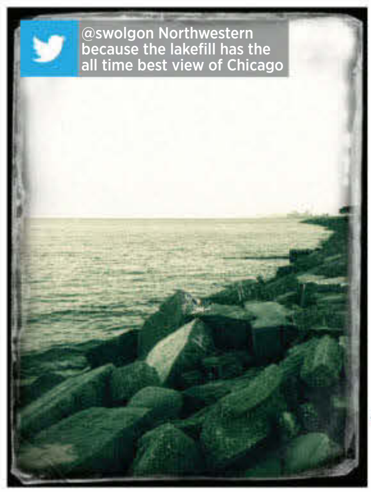
12 University of Pennsylvania
Philadelphia, PA
Undergrad pop. **11,525**
Total cost **$64,200**
Grateful Grad Rank **22** • Financial Health **A+**

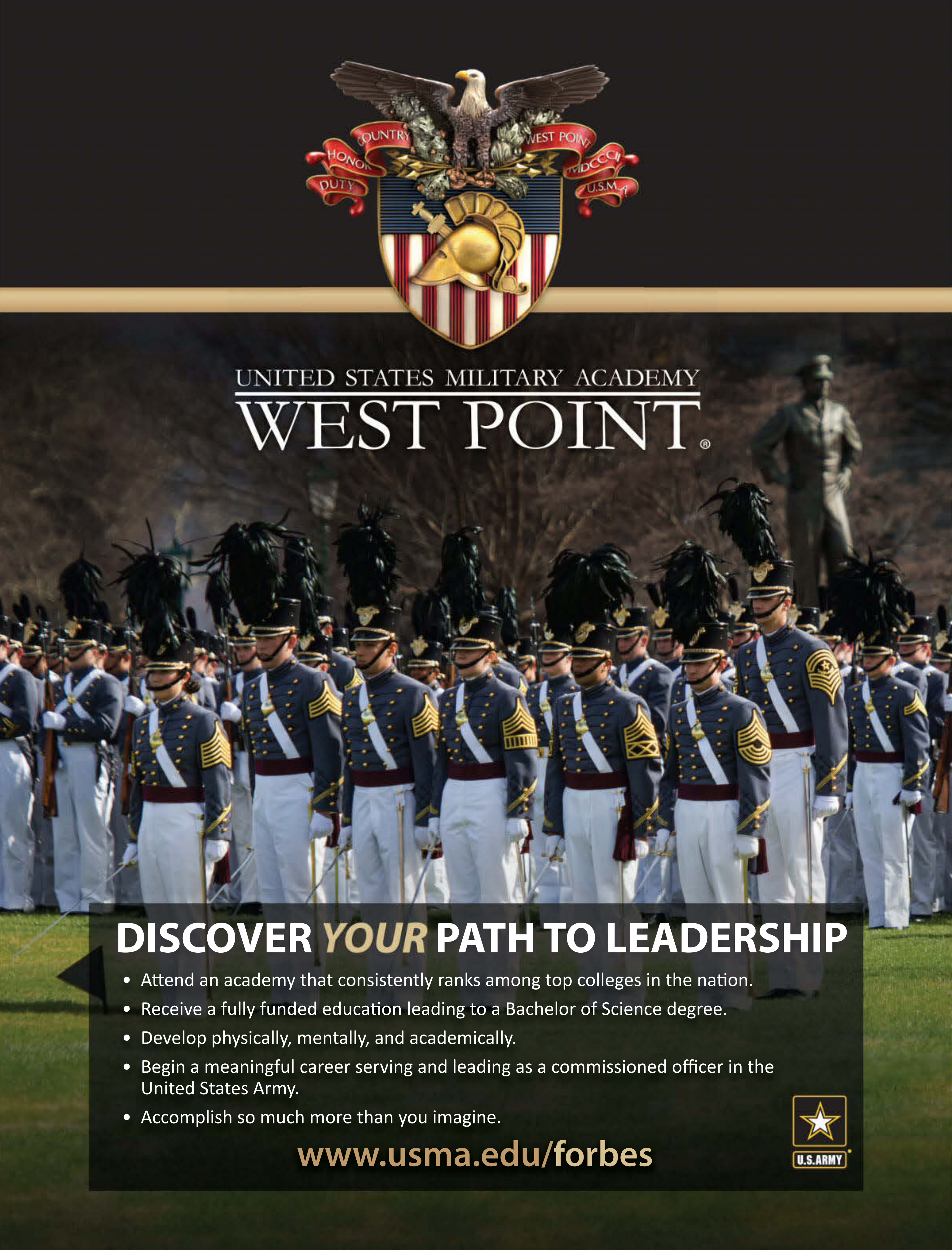
13 University of Notre Dame
Notre Dame, IN
Undergrad pop. **8,477**
Total cost **$62,461**
Grateful Grad Rank **10** • Financial Health **A+**

14 Dartmouth College
Hanover, NH
Undergrad pop. **4,276**
Total cost **$65,133**
Grateful Grad Rank **2** • Financial Health **A+**

15 Columbia University
New York, NY
Undergrad pop. **7,970**
Total cost **$66,604**
Grateful Grad Rank **28** • Financial Health **A+**

16 Northwestern University
Evanston, IL
Undergrad pop. **9,283**
Total cost **$65,519**
Grateful Grad Rank **31** • Financial Health **A+**

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dining experience." The influx of some 137 people like Ramona has expanded OpenTable into 32,000 restaurants, with only 14 data scientists needed to run its insight-crunching machinery.

At 4:30 p.m. on a recent Monday Ramona popped into Marlowe, a bistro in the same trendy San Francisco neighborhood where Slack is based. She greeted owner Anna Weinberg, who also owns Park Tavern and another property, with a big hug. The postwork rush hadn't started yet; Marlowe was empty. Moments later the two women were peering at Ramona's iPad, where a giant "opportunity" was on display. In the past year, it turned out, thousands of OpenTable users had been told seats weren't available at Park Tavern. Often people were trying to book tables far in advance. But Weinberg's restaurant offered only a 30-day look-ahead.

Vogler grinned as if he'd just hit the lottery. "This kind of input is endlessly valuable."

"Some people look two months out," Ramona explained.

"Fine!" Weinberg declared. "Let's do 60 days then. We'll do it for all three of our restaurants."

The next day Ramona worked her Uber account to exhaustion, dashing into a wide variety of San Francisco cafes, bars and restaurants. At a hipster cocktail establishment, Bar Agricole, Ramona let owner Thad Vogler know that he was getting 37% of his online bookings from mobile users, compared with 32% for his peers. Vogler grinned as if he'd just hit the lottery. His restaurant had been doing a big social media push, he explained, and now he knew it was working. "This kind of input is endlessly valuable," he declared.

In theory OpenTable could send data analysts on the road to share the same information. But Grant Parsamyan, OpenTable's head of business intelligence, shudders at the thought. He's a stocky man who favors plaid shirts at work. While he enjoys fine dining, he admits to being starstruck by the ways top restaurateurs project their authority. "I wouldn't be effective at all, trying to do what Shawna does," Parsamyan concedes.

When restaurateurs scoff at OpenTable's analysis, Ramona earns her keep. On a recent visit to Town Hall, a San Francisco restaurant that specializes in country ham and other southern-inspired cuisine, Ramona and a colleague, Denise Capobianco, suggested that restaurant manager Bjorn Kock wasn't doing enough to attract large groups.

Kock bristled. "Our design does not lend itself to a lot of large parties," he declared. Big groups take too long to finish, he explained. Their rush of orders at the same time strains the kitchen. Besides, his restaurant's long, angular layout would make big tables as unwelcome as a boulder in the midst of a stream. "Those tens!" he declared with a dismissive sweep of his hand. "I don't want them in our dining room."

Ramona didn't give up. "I see your point," she said. "But what about trying an experiment on Sundays, when traffic is lighter. You could offer one ten-seat booking at 5 p.m. That wouldn't strain the kitchen. It might be extra business that you wouldn't get otherwise."

Kock nodded his head. "That could work," he declared. "I'm totally willing to play around with that possibility." And thus the digital revolution spreads a tiny bit further, thanks to whiz-bang code underpinning OpenTable—and the interpersonal skills of an English major. F

THE BEST 200

17 Wesleyan University
Middletown, CT
Undergrad pop. **2,906**
Total cost **$64,163**
Grateful Grad Rank **50** • Financial Health **A+**

18 Claremont McKenna College
Claremont, CA
Undergrad pop. **1,316**
Total cost **$64,215**
Grateful Grad Rank **6** • Financial Health **A+**

19 Haverford College
Haverford, PA
Undergrad pop. **1,187**
Total cost **$64,226**
Grateful Grad Rank **9** • Financial Health **A+**

20 University of Chicago
Chicago, IL
Undergrad pop. **5,703**
Total cost **$67,572**
Grateful Grad Rank **19** • Financial Health **A+**

21 Bowdoin College
Brunswick, ME
Undergrad pop. **1,795**
Total cost **$61,650**
Grateful Grad Rank **4** • Financial Health **A+**

22 Duke University
Durham, NC
Undergrad pop. **6,646**
Total cost **$63,999**
Grateful Grad Rank **13** • Financial Health **A+**

23 Georgetown University
Washington, DC
Undergrad pop. **7,636**
Total cost **$64,540**
Grateful Grad Rank **146** • Financial Health **B**

24 Tufts University
Medford, MA
Undergrad pop. **5,180**
Total cost **$63,400**
Grateful Grad Rank **73** • Financial Health **A**

25 Cornell University
Ithaca, NY
Undergrad pop. **14,393**
Total cost **$63,606**
Grateful Grad Rank **38** • Financial Health **A+**

Debt And Deceit

The hucksters who once preyed on underwater mortgage holders have a new set of victims—those sinking under student loans.

BY JOHN F. WASIK

In February 2014 Kim Kotary was living in Queens, N.Y., working 25 hours a week in three part-time jobs at nonprofits and as a freelance crafts teacher and designer, and worrying how she'd ever pay off the $20,000 she borrowed to earn a master's from New York's Fashion Institute of Technology back in 2002. So when she heard a radio ad offering information about how those working for nonprofits could get student debt forgiven, she called the 800 number. A phone rep told her Broadsword Student Advantage could get her monthly payments suspended, based on her poverty-level income, and help her apply to get her debt forgiven after ten years.

Kotary agreed to pay Broadsword $500 and signed its forms online, without, she admits, reading them closely. On top of the $500, Affordable Life Plans, a Securities & Exchange Commission-registered investment advisor, started taking $29.95 a month from her bank account. Then, last August, Kotary lost her main part-time nonprofit gig. Finally, this past March, after

Forty million Americans are carrying nearly $1.4 trillion in student debt, and 8 million of those borrowers are already in default.

13 months of paying, she discovered she wouldn't be eligible for the debt forgiveness unless she worked 30 hours a week in the not-for-profit sector, and that she could have applied for forgiveness herself, for free, at www.studentloans.gov. "When I found out it was free, it really pissed me off," says Kotary, 43, who has stopped the monthly payments. "I was told that they could help me save more than they charged me for the services."

Arguably, she got off cheap—Affordable Life typically charges $49.99 a month, according to a lawsuit the Illinois Attorney General filed last year charging Broadsword with fraud and with using Affordable, a sister company, to charge fees that would otherwise be barred by Illinois' Debt Settlement Act. In court papers Broadsword denies wrongdoing and says that it was simply soliciting business for Affordable, which as an SEC-registered advisor is exempt from the state's debt settlement law.

In the wake of the 2008 housing crash, mortgage debt "relief" companies sprang up like poison mushrooms. Promising to rescue homeowners with underwater mortgages, they charged exorbitant—and sometimes illegal—fees. Now similar hucksters have targeted a new group of drowning debtors.

Some of the new student debt relief outfits promote their services via direct mail and others advertise on radio or cable TV. But mostly, they go where the Millennials are: online. They pop up on Facebook, Instagram and Twitter and dominate the search results for terms such as "student loan relief," "student debt settlement," and "Obama student loan forgiveness," overshadowing the U.S. Department of Education's website. When we conducted repeated searches of those terms, 6 of the 18 sites that most frequently came up high in the results had URLs that included the word "federal" or "US" or "USA." Yet not one was part of the government. In addition, 7 had addresses ending in ".org," which might lead a naïve debtor to think they were not-for-profits, which is not a requirement for a dot-org registration.

Students can lose more than just the fees they shell out if they turn to the wrong places for help. A consumer fraud suit Minnesota's Attorney General filed in July against Student Aid Center, Inc., which does business on the Web at studentloanforgivenessplans.org, asserts some clients ended up in a worse position while paying the firm to solve their problems. A 36-year-old manager who owed $67,000 had his wages garnished and a physical therapist who owed $100,000 got hit with late fees, the suit alleges. It notes that more than 800 Minnesota residents have paid as much as $1,500 to Student Aid Center "for something they could do on their own for free."

"We're definitely not a scam, that's for sure," responds Damien Alvarez, the copresident of Student Aid. "We process the paperwork and we see it through ... you could enroll yourself in the wrong program," Alvarez told FORBES.

The potential market for the likes

RYAN HESHKA FOR FORBES

THE BEST 200

26 Wellesley College
Wellesley, MA
Undergrad pop. **2,474**
Total cost **$61,088**
Grateful Grad Rank **8** • Financial Health **A+**

27 United States Naval Academy
Annapolis, MD
Undergrad pop. **4,526**
Total cost **$0**
Grateful Grad Rank **N/A**

28 Vassar College
Poughkeepsie, NY
Undergrad pop. **2,477**
Total cost **$63,390**
Grateful Grad Rank **29** • Financial Health **A+**

29 Washington and Lee University
Lexington, VA
Undergrad pop. **1,855**
Total cost **$60,084**
Grateful Grad Rank **12** • Financial Health **A+**

30 Carleton College
Northfield, MN
Undergrad pop. **2,045**
Total cost **$62,465**
Grateful Grad Rank **11** • Financial Health **A+**

31 Davidson College
Davidson, NC
Undergrad pop. **1,788**
Total cost **$60,921**
Grateful Grad Rank **7** • Financial Health **A+**

32 Rice University
Houston, TX
Undergrad pop. **3,965**
Total cost **$56,316**
Grateful Grad Rank **25** • Financial Health **A+**

33 California Institute of Technology
Pasadena, CA
Undergrad pop. **977**
Total cost **$60,990**
Grateful Grad Rank **23** • Financial Health **A**

34 Middlebury College
Middlebury, VT
Undergrad pop. **2,495**
Total cost **$61,160**
Grateful Grad Rank **21** • Financial Health **A+**

35 University of California, Berkeley
Berkeley, CA
Undergrad pop. **25,951**
Total cost **$34,356** in-state / **$57,234** out-of-state
Grateful Grad Rank **N/A**

36 University of Virginia
Charlottesville, VA
Undergrad pop. **16,087**
Total cost **$27,010** in-state **/$56,196** out-of-state
Grateful Grad Rank **N/A**

37 Boston College
Chestnut Hill, MA
Undergrad pop. **9,698**
Total cost **$63,022**
Grateful Grad Rank **97** • Financial Health **A**

38 United States Air Force Academy
Colorado Springs, CO
Undergrad pop. **3,993**
Total cost **$0**
Grateful Grad Rank **N/A**

39 College of William and Mary
Williamsburg, VA
Undergrad pop. **6,271**
Total cost **$31,175** in-state **/ $53,435** out-of-state
Grateful Grad Rank **N/A**

40 Colgate University
Hamilton, NY
Undergrad pop. **2,890**
Total cost **$62,405**
Grateful Grad Rank **40** • Financial Health **A+**

of Student Aid Center is huge. Some 40 million Americans hold nearly $1.4 trillion in student debt and every day more and more of them slip behind on their payments. The federal Consumer Financial Protection Bureau (CFPB) estimates that 8 million borrowers are already in default. Moreover, the pipeline of potentially troubled debtors is stuffed. As of Mar. 30, 2.5 million borrowers with direct student loans from Uncle Sam were delinquent on their payments, although not yet in default, and 6.1 million had been granted some sort of temporary "forbearance" or "deferment" of loan payments, a sign of possible trouble to come. (Another 9.7 million borrowers hadn't yet made payments because they were still in school or in a six-month "grace" period after leaving school.)

"The rapid rise in student loan defaults has created a climate for scammers to proliferate and prey on struggling borrowers," observes Rohit Chopra, the former student loan ombudsman of the CFPB. "This bears a disturbing resemblance to the so-called foreclosure rescue scams that emerged in the wake of the mortgage crisis."

Student debt counseling for a fee can be a legitimate service—and a needed one. Many colleges do a poor job of advising students about the debt they're assuming. The U.S. Department of Education (ED), which runs the federal student loan programs, offers little direct or personalized help and last December was criticized by its own Inspector General for lacking a "comprehensive plan or strategy to prevent student loan defaults." Meanwhile, there have been widespread complaints about the performance of student loan servicers, which the CFPB moved to regulate in December 2013.

Aggressive debt-relief pitches typically play off information—and misinformation—about a set of federal programs that allow some of those with outsize debt to pay only 10% or 15% or 20% of their "discretionary" income and have any remaining balance forgiven after 10, 20 or 25 years. But those "income-based" and "income-contingent" plans are available only for federal and federally guaranteed loans, not private ones. Plus, the ten-year forgiveness period is only for those who spend that time in public or charitable sector jobs. And students can apply to these federal programs by themselves for free *(see box, p. 85)*.

"My main problem with student debt relief is that it is a scam," says Andrew Weber, an Athens, Ohio debt counselor who has worked with student debtors since 2013. A legitimate counselor, he says, can help guide a borrower through his options but can't grant relief to anyone. Weber is certified by the National Association of Certified Credit Counselors, a voluntary not-for-profit group, which requires applicants to complete training materials and pass a test.

None of the 18 debt relief firms that showed up high in our Web

searches volunteered information about their "counselors'" credentials and the folks we talked to at the firms all sounded like salesmen. The fact is, anyone can set up shop as a student debt counselor, since the business isn't directly regulated.

Even without direct regulation, however, a variety of federal and state consumer protection laws should prevent the most predatory practices. For example, regulations bar credit repair operations (which the student debt advisors arguably are) from charging a fee before a service is provided and prohibit charging an ongoing monthly fee for access to free government services. Using these and other laws, federal and state regulators have brought more than 500 enforcement actions against mortgage debt relief companies, forcing many of them to cease operations and pay refunds and/or penalties.

So far, however, enforcers have sued just ten student debt workout outfits (for the list, go to www.forbes.com/studentdebtsuits). Significantly, Illinois Attorney General Lisa Madigan, who has sued seven of the firms, wrote to U.S. Secretary of Education Arne Duncan in June warning that "we cannot simply litigate away this problem." She called on him to set up a certification process to help borrowers distinguish "legitimate counselors" from "an uncertified entity that is most likely a costly sham operation." And she pointed to a precedent: The Department of Housing & Urban Development has already set up a program to certify mortgage workout counselors.

Under Secretary of Education Ted Mitchell, who oversees student aid, told FORBES his department is working on a "clear road map to borrower relief, bet-

5 Smart Steps on Student Debt

RATHER THAN TURNING TO A QUESTIONABLE DEBT RELIEF FIRM YOU FIND ON THE WEB, TAKE THESE FIVE STEPS.

KNOW WHAT YOU OWE. View all your federal loans on the National Student Loan Data System, at nslds.ed.gov. You won't find info on private loans there, so if you have any, make a list of the balance and interest rate of each.

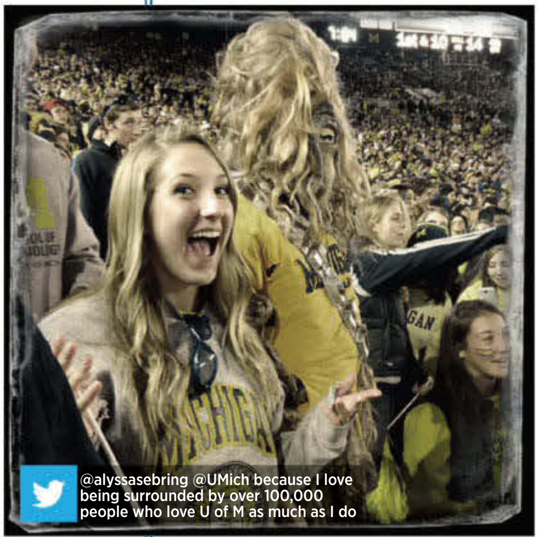
REFINANCE. If you have a high-paying job and are able to make your monthly payments, you may be able to reduce your total costs by refinancing through startups like SoFi, CommonBond and Earnest. Citizens Bank and Darien Rowayton Bank have started offering refis, too.

CHECK OUT FEDERAL OPTIONS. Having trouble making the monthly payment on federal loans? Get details of plans that cap your monthly payment to a percentage of your income at studentaid.ed.gov, and apply for one at studentloans.gov. Use government calculators to see how much you can lower monthly payments and what the total costs of your loans will be over time. Remember, stretching out payments may raise the total interest you pay.

JAWBONE PRIVATE LENDERS. If you're having trouble making payments on private student loans, call the servicer and ask for relief; Wells Fargo and Discover offer loan modifications or interest rate reductions for struggling borrowers. Lenders may also temporarily postpone your payments.

GET LEGIT ADVICE. Still confused? Get more info at CFPB.gov and the National Consumer Law Center's Student Loan Borrower Assistance Project, which offers both information and some legal referrals at studentloanborrowerassistance.org. File complaints about both debt relief and servicing firms with the CFPB. Some state attorneys general also have robust help sites and take complaints. Above all, don't let anyone pressure you into choosing a repayment plan you're unsure about or paying a fee to apply to one.

—Maggie McGrath and John F. Wasik



41 University of Michigan, Ann Arbor
Ann Arbor, MI
Undergrad pop. **28,283**
Total cost **$26,984** in-state **/ $55,404** out-of-state
Grateful Grad Rank **N/A**

42 Barnard College
New York, NY
Undergrad pop. **2,489**
Total cost **$63,220**
Grateful Grad Rank **N/A** • Financial Health **A**

43 Bucknell University
Lewisburg, PA
Undergrad pop. **3,532**
Total cost **$63,040**
Grateful Grad Rank **83** • Financial Health **A**

44 Colby College
Waterville, ME
Undergrad pop. **1,820**
Total cost **$61,100**
Grateful Grad Rank **33** • Financial Health **A+**

45 University of California, Los Angeles
Los Angeles, CA
Undergrad pop. **28,674**
Total cost **$32,978** in-state **/ $55,856** out-of-state
Grateful Grad Rank **N/A**

46 Oberlin College
Oberlin, OH
Undergrad pop. **2,894**
Total cost **$64,396**
Grateful Grad Rank **54** • Financial Health **A+**

47 Vanderbilt University
Nashville, TN
Undergrad pop. **6,835**
Total cost **$62,320**
Grateful Grad Rank **36** • Financial Health **A+**

48 Kenyon College
Gambier, OH
Undergrad pop. **1,705**
Total cost **$62,160**
Grateful Grad Rank **42** • Financial Health **A**

49 University of North Carolina, Chapel Hill
Chapel Hill, NC
Undergrad pop. **18,370**
Total cost **$25,650** in-state / **$50,732** out-of-state
Grateful Grad Rank **N/A**

50 Whitman College
Walla Walla, WA
Undergrad pop. **1,541**
Total cost **$58,228**
Grateful Grad Rank **53** • Financial Health **A**

51 Hamilton College
Clinton, NY
Undergrad pop. **1,926**
Total cost **$61,770**
Grateful Grad Rank **39** • Financial Health **A+**

52 Reed College
Portland, OR
Undergrad pop. **1,395**
Total cost **$61,910**
Grateful Grad Rank **41** • Financial Health **A+**

ter online tools to lower payments, an integrated complaint system and exploring the borrower experience from front to back." But he wouldn't say when those changes will be rolled out or exactly what they would entail. A spokesman, however, later said that certification for debt counselors won't be part of the ED's proposals.

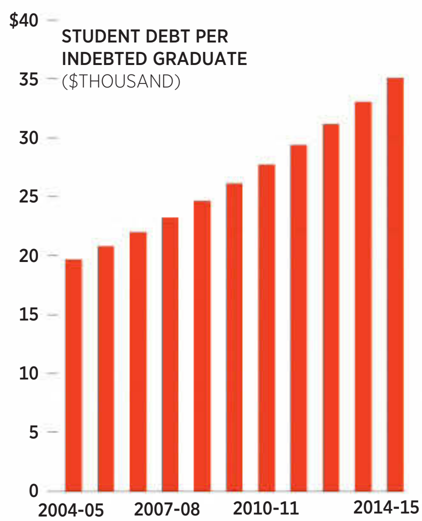
As for the CFPB, despite Chopra's concerns, it has brought just two suits against the debt relief peddlers. One suit charges that Irvine WebWorks, Inc., which does business online as StudentLoanProcessing.us, and its owner, James Krause, violated laws governing credit relief and telemarketing by charging fees in advance of providing services and misrepresenting what it does and its connection to the government. The CFPB is seeking penalties and $6 million in refunds for customers—an indication that thousands of debtors were allegedly misled. WebWorks denies wrongdoing and says it has changed one practice the CFPB objected to—using a seal with the tree of knowledge that looks suspiciously like the official seal of the Department of Education. Instead, its current seal features two American flags.

"We're looking forward to our week in court. We will prove that our services give a lot of benefit to the clients we charge," Krause said in an interview. He insisted the firm isn't a credit repair outfit, but simply helps students consolidate their loans and get into a payment plan they can afford. "The government says that the clients could do this for themselves and they shouldn't be paying us for our services," said Krause. "I say every person can change their own oil if they wanted to. Every person can mow their own lawn and clean their own pool. Paying someone for services is not out of line. We do not represent ourselves to be part of the government. And the mere fact that we have a flag in our logo doesn't mean we're a part of the government."

Natalia Abrams, executive director of Studentdebtcrisis.org, a nonprofit that focuses on college debt issues, says her organization finds the online debt relief firms to be "very deceptive." Debtors end up at these sites, she says, because "they

Bachelor's in Debt

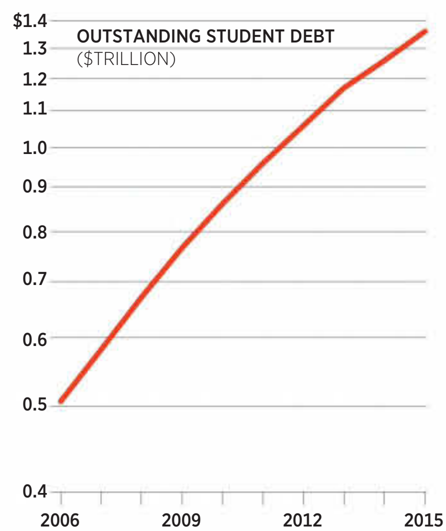
The average borrowed for a four-year undergraduate degree has climbed.



SOURCE: MARK KANTROWITZ, EDVISORS NETWORK.

Hypergrowth

While total student debt, including for trade and grad schools, has exploded.



SOURCE: FEDERAL RESERVE.

Federal and state enforcers have brought more than 500 actions against mortgage relief firms but just 10 against the student debt relief operators.

don't know where to turn and don't feel that anyone cares about them."

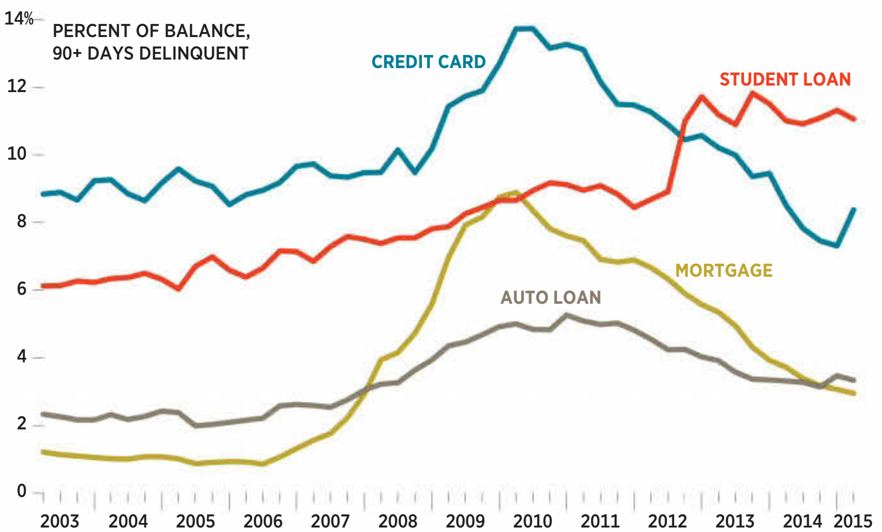
That's what led Diana Johnson to go online in search of help. Johnson, 50, has a total of $100,000 in federal and private student debt, a B.S. in psychology from Portland (Oregon) State University and a job as a wellness programs director at an assisted living facility in Portland paying just $14.95 an hour. Last November, hounded by debt collectors, she called a student debt relief service she found online. It offered to file an income-based repayment application for her for $400. "I was a little scared and desperate, so I gave the sales guy my debit card and some other pertinent information," she says.

But she immediately did some more research and realized she could file for the repayment plan herself for free and that it would only cover her federal loans regardless. She called back the salesman, and after much back-and-forth, was able to cancel before the money was taken from her bank account. "He didn't make it easy, using all sorts of guilt and excuses why I shouldn't do it myself," she says. Since then Johnson has filed three complaints with the CFPB against her loan servicer, which, she says, prompted a new responsiveness on its part. It reduced the monthly payment due on her loans. Terrific that it worked for Johnson, but hardly a strategy for protecting millions of vulnerable, stressed-out student debtors. F

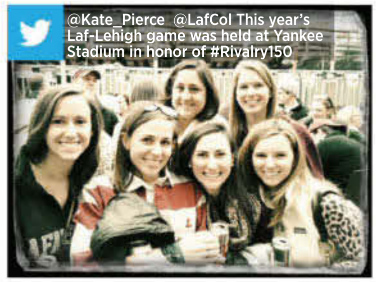
This story was reported with the assistance of a grant from the Nation Institute Investigative Fund. Additional reporting by Maggie McGrath.

Now the Weakest Link

Since the Great Recession the share of debt more than 90 days late has continued to rise for student loans, even as it's fallen for mortgages, credit cards and auto loans.



SOURCE: FRBNY CONSUMER CREDIT PANEL/EQUIFAX.



53 Lafayette College
Easton, PA
Undergrad pop. **2,486**
Total cost **$61,905**
Grateful Grad Rank **57** • Financial Health **A**

54 Smith College
Northampton, MA
Undergrad pop. **2,606**
Total cost **$62,330**
Grateful Grad Rank **43** • Financial Health **A+**

55 College of the Holy Cross
Worcester, MA
Undergrad pop. **2,912**
Total cost **$59,642**
Grateful Grad Rank **59** • Financial Health **A**

56 Carnegie Mellon University
Pittsburgh, PA
Undergrad pop. **5,917**
Total cost **$63,822**
Grateful Grad Rank **51** • Financial Health **A**

57 Harvey Mudd College
Claremont, CA
Undergrad pop. **807**
Total cost **$66,627**
Grateful Grad Rank **TK** • Financial Health **A+**

58 Franklin and Marshall College
Lancaster, PA
Undergrad pop. **2,297**
Total cost **$63,269**
Grateful Grad Rank **72** • Financial Health **A**

59 Wake Forest University
Winston-Salem, NC
Undergrad pop. **4,823**
Total cost **$62,538**
Grateful Grad Rank **45** • Financial Health **A+**

60 University of Rochester
Rochester, NY
Undergrad pop. **6,177**
Total cost **$63,268**
Grateful Grad Rank **34** • Financial Health **A**

Duty, honor and a company with a conscience: Emily Núñez Cavness of Sword & Plough.

Incubators for Poets

Small liberal arts colleges are reinventing themselves as entrepreneur hatcheries—both for billion-dollar startups and social change makers.

BY LIYAN CHEN

Before her last semester of college Emily Núñez Cavness never imagined starting her own business. On a frigid Vermont evening in late January 2012 the French literature and international studies major attended Middlebury College's inaugural social entrepreneurship symposium purely out of curiosity. Sitting in the campus' storied 99-year-old chapel, Cavness listened to keynote speaker Jacqueline Novogratz, founder of nonprofit VC fund Acumen, share examples of social enterprises, including one that recycled coffee waste into fertilizers.

Cavness, an Army ROTC cadet who grew up in a military family, immediately thought of the huge piles of military surplus she saw at the various bases she visited. What if that discarded material could be turned into something beautiful, even salable? What if such a recycling project could bridge the divide between the military and civilians—a handbag or backpack as a constant, functional reminder?

As a liberal arts student, Cavness had little real-world experience, but her elder sister, Betsy, encouraged her to enter MiddChallenge, Middlebury's business-plan competition. "I didn't really know what a business plan was. It was daunting," Cavness recalls. But her team won first place—and was rewarded with a $3,000 grant.

Since that initial boost, Cavness has taken her e-commerce startup, Sword & Plough, from an idea to a real social enterprise that has sold more than 7,000 stylish bags and accessories, while recycling over 25,000 pounds of military surplus products, supporting 38 new jobs for veterans and donating 10% of profits to charitable causes. "Without Middlebury and the Center for Social Entrepreneurship, Sword & Plough would have remained just another interesting idea rather than an exciting reality," says Cavness, 25, now a

first lieutenant who joined the FORBES 30 Under 30 roster this year.

With annual symposiums, mentorship programs and funding competitions, Middlebury is one of many small liberal arts colleges reinventing themselves as modern-day startup incubators—geared toward for-profit enterprises and nonprofits alike. Driven by market demand and the idea of teaching practical skills that would create larger impacts outside of traditional liberal arts classrooms, these colleges are encouraging students to pursue entrepreneurship—in particular, social entrepreneurship. Success stories like Sword & Plough are proving that business is no longer the exclusive territory of research universities and specialty colleges.

As many liberal arts colleges have faced a falloff in enrollment over the years as well as criticism about failing to better prepare students for gainful employment and careers *(see p. 70)*, teaching and encouraging entrepreneurship has emerged as a smart strategy and powerful tool.

"How do you translate the values of liberal arts education, which is about creating innovative ideas, into something actionable after you graduate in this startup economy?" asks Patrick Bultema, executive director at Colorado College's Innovation Institute. "What we create here is to help with that translation exercise." Colorado College, which this year ranks third on FORBES' Most Entrepreneurial Colleges list, gives out $50,000 in seed money at its annual The Big Idea pitch competition. The school is not alone: Other colleges shell out small fortunes to encourage student venture ideas. Hampshire College, known for its open curriculum and lack of distribution requirements or grades, for instance, created a $1 million seed fund in 2013 that aims to allocate $200,000 a year for five years.

Middlebury ranks second on this year's list, boasting more founders and owners among alumni and students on LinkedIn than even UC, Berkeley or Cornell University (adjusted for student body size). How does a tiny school in rural Vermont do that? As an umbrella for the college's entrepreneurial initiatives, in 2007 Middlebury founded the Programs on Creativity & Innovation, including MiddEntrepreneurs—a one-month intensive, full-time course that focuses on starting a company. Along the way the college converted the Old Stone Mill, a five-story building in downtown Middlebury, into a coworking space. "It was almost like we were taking these ideas from business schools and figuring out what a Middlebury version would be," says Associate Dean Elizabeth Robinson, the program's founder.

For Cavness, Novogratz's speech was only the inspiration. On top of the $3,000 grant, the Sword & Plough team raised funding from MiddStart, Middlebury's internal Kickstarter-like fundraising site, and a seed investment from Alan Hassenfeld, former CEO of Hasbro who endowed the college's Center for Social Entrepreneurship. Before her seven-month deployment to Afghanistan as second lieutenant in the 4th Engineer Battalion, Cavness introduced her startup to the outside world, raising an additional $312,000 on Kickstarter for a campaign that targeted just $20,000. "Middlebury was there every step of the way, challenging me in every aspect of the business model to incorporate social impact," she says. It helped that the Center for Social Entrepreneurship was situated

STEPHEN RAMSEY FOR FORBES

THE BEST 200

61 Colorado College
Colorado Springs, CO
Undergrad pop. **2,041**
Total cost **$60,500**
Grateful Grad Rank **121** • Financial Health **A**

62 Johns Hopkins University
Baltimore, MD
Undergrad pop. **6,117**
Total cost **$63,529**
Grateful Grad Rank **30** • Financial Health **A**

63 Washington University in St. Louis
St. Louis, MO
Undergrad pop. **7,336**
Total cost **$66,376**
Grateful Grad Rank **27** • Financial Health **A+**

64 Bryn Mawr College
Bryn Mawr, PA
Undergrad pop. **1,328**
Total cost **$61,890**
Grateful Grad Rank **18** • Financial Health **A+**

65 Grinnell College
Grinnell, IA
Undergrad pop. **1,721**
Total cost **$59,317**
Grateful Grad Rank **86** • Financial Health **A**

66 Union College
Schenectady, NY
Undergrad pop. **2,246**
Total cost **$62,205**
Grateful Grad Rank • Financial Health **A**

67 Macalester College
St. Paul, MN
Undergrad pop. **2,039**
Total cost **$59,743**
Grateful Grad Rank **79** • Financial Health **A**

68 University of Illinois, Urbana-Champaign
Champaign, IL
Undergrad pop. **32,695**
Total cost **$29,568** in-state / **$44,194** out-of-state
Grateful Grad Rank **N/A**

69 University of Wisconsin, Madison
Madison, WI
Undergrad pop. **30,728**
Total cost **$24,394** in-state / **$40,644** out-of-state
Grateful Grad Rank **N/A**

70 Bates College
Lewiston, ME
Undergrad pop. **1,791**
Total cost **$62,770**
Grateful Grad Rank **66** • Financial Health **A**

THE BEST 200

71 University of Southern California
Los Angeles, CA
Undergrad pop. **18,445**
Total cost **$64,694**
Grateful Grad Rank **32** • Financial Health **A**

72 Villanova University
Villanova, PA
Undergrad pop. **7,042**
Total cost **$60,694**
Grateful Grad Rank **159** • Financial Health **B**

73 Cooper Union
New York, NY
Undergrad pop. **868**
Total cost **$60,345**
Grateful Grad Rank **N/A** • Financial Health **A+**

74 Lehigh University
Bethlehem, PA
Undergrad pop. **4,931**
Total cost **$58,835**
Grateful Grad Rank **95** • Financial Health **A**

75 Brandeis University
Waltham, MA
Undergrad pop. **3,614**
Total cost **$63,250**
Grateful Grad Rank **46** • Financial Health **A-**

76 University of Washington
Seattle, WA
Undergrad pop. **29756**
Total cost **$26,698** in-state / **$47,817** out-of-state
Grateful Grad Rank **N/A**

just two floors below her dorm room.

Startup infrastructure can be a powerful recruitment tool for bright students who appreciate the traditional liberal arts model but also are attracted to the Silicon Valley ethos. Megan Grassell, who at age 17 founded Yellowberry, a company that makes and sells age-appropriate bras for girls, said Middlebury's support for entrepreneurship helped make her college decision. "For Middlebury to have all the resources at my fingertips and an environment so supportive of young entrepreneurs, it's inspiring as an incoming freshman," says the 19-year-old, who doesn't want to specialize in busi-

Most Entrepreneurial Colleges

Top research universities aren't the only startup launchpads.

1 COOPER UNION
Mechanical engineering students must take Principles of Design, a hands-on course modeled after Stanford's popular Lean LaunchPad.

2 MIDDLEBURY COLLEGE
The four-week immersion program MiddCore has brought in over 40 entrepreneur mentors such as Peet's Coffee and Tea CEO Dave Burwick.

3 COLORADO COLLEGE
The school's Innovation Institute hosts Innovation Thursdays, weekly workshops on nitty-gritty startup skills.

4 BENNINGTON COLLEGE
Students often start ventures during Field Work Terms—four seven-week winter terms required for graduation.

5 MOREHOUSE COLLEGE
MLK Jr.'s alma mater hosts an annual Innovation Expo for undergrads from historically black colleges and institutions that serve minorities.

6 HAMPSHIRE COLLEGE
Thanks to $1 million from alum and VC Michael Vlock, Hampshire is shelling out $200,000 a year to student ventures.

7 SKIDMORE COLLEGE
Nearly a third of every graduating class takes MB107, in which students give presentations in teams to executives in a boardroom setting.

8 TRINITY UNIVERSITY
Incoming first-years can sign up to live on a floor together in Beze Residence Hall, nicknamed the "Entrepreneur Floor."

9 WESLEYAN UNIVERSITY
The Patricelli Center of Social Entrepreneurship, endowed by a $2 million alumni gift, has built a network of more than 100 alumni volunteers.

10 WESTMONT COLLEGE
Its entrepreneurship center sends students to Haiti to help launch locally owned small businesses, like food stands and moped taxi services.

11 ROLLINS COLLEGE
The college introduced a social entrepreneurship major in 2014, and over 200 students have enrolled since.

12 POMONA COLLEGE
The student-run Pomona Ventures organizes an annual Sage Tank, a pitch competition modeled after *Shark Tank*.

13 EMERSON COLLEGE
The Emerson Experience in Entrepreneurship—a.k.a. E3—is a yearlong business boot-camp course.

14 CLAREMONT MCKENNA COLLEGE
Billionaire benefactor Henry Kravis ('67) gives $15,000 annually to CMC's Innovative Start-Up Award.

15 VASSAR COLLEGE
Alum Caterina Fake, cofounder of Flickr with ex-hubby Stewart Butterfield (*see p. 70*), is on her third startup, Findery, a travel guide.

16 CONNECTICUT COLLEGE
The Holleran Social Entrepreneurship Initiative has backed projects ranging from a campus bike cooperative to a service trip to Uganda.

17 OHIO WESLEYAN UNIVERSITY
An entrepreneurial scholars program combines classwork with internships and competitions.

18 COLBY COLLEGE
The Kennebec Valley Entrepreneurial Network links students at Colby and surrounding Maine colleges with local business owners.

19 SMITH COLLEGE
Dozens of teams—each led by a woman—pitch startup ideas at Smith's annual Draper Undergraduate Women Entrepreneurs' Competition.

20 UNIVERSITY OF PUGET SOUND
Nine promising juniors and seniors are selected to live in the Entrepreneurship Flat, also known as the E-House.

ness as an undergraduate, despite her experience. "With the incredible resources at the entrepreneurship program, it's the best of both worlds."

Colleges do best when they build such resources on top of core strengths. Eric Lima, a mechanical engineering professor who helps run Cooper Union's popular Invention Factory summer program, intentionally emphasizes making products rather than becoming an entrepreneur. "When students make something exciting, they often want to develop it commercially," says Lima. Focusing on problem solving and product creation, New York City's Cooper Union, whose curricula are based on engineering, fine arts and architecture, tops the Most Entrepreneurial Colleges list this year.

At many schools that entrepreneurial atmosphere is initially driven by alumni. Colgate alum and serial entrepreneur Andy Greenfield started a one-man mentorship program at his alma mater that same year. Today his Thought Into Action Entrepreneurship Institute, backed by Colgate's president, hosts entrepreneur weekends to bring back alumni—along with big-name entrepreneurs such as Richard Branson and Airbnb's Brian Chesky—to connect with current students. Oberlin College & Conservatory has taken a similar path. The seven-alumni executive committee that leads its LaunchU accelerator, which supports about 20 students' business ideas each year, will soon defer to a new employee hired to be the college's "Director of Entrepreneurship."

As historically antibusiness colleges begin to look more like Y Combinator, internal debates about academic priorities are inevitable. "There were some understandable concerns from certain segments of the university about if and how entrepreneurship fits into a liberal arts college," Greenfield says.

That's why social entrepreneurship—a marriage of nonprofit idealism and business techniques—fits liberal arts so perfectly. "The term 'social entrepreneurship' gives students the license to put their energy and passion into something they wouldn't have thought of previously," says Makaela Kingsley, director of Patricelli Center for Social Entrepreneurship at Wesleyan University. Without such a pitch, many students tell her, they would never have visited the center because "entrepreneurship" sounds too corporate. For Kingsley, her first task is to help students adapt a broader definition of business. "Our top priority is social good, and that always has to trump profits, but it doesn't have to preclude profits," she says. "Learning some practical skills is no doubt going to lead the students to working toward the greater good."

Social entrepreneurship is quickly becoming a higher-ed staple. Three years ago Middlebury started the first forum to discuss social entrepreneurship in the context of a liberal arts education, attracting fewer than 60 educators from 16 colleges and universities. The number of attendees doubled to 115 at the fourth annual forum this June, with professors and school administrators coming from colleges such as Pomona College

@honsybakdham Student diversity in the heart of this beautiful city makes @nyuniversity #MyTopCollege

77 New York University
New York, NY
Undergrad pop. **22,615**
Total cost **$66,022**
Grateful Grad Rank **99** • Financial Health **B**

78 DePauw University
Greencastle, IN
Undergrad pop. **2,304**
Total cost **$55,896**
Grateful Grad Rank **61** • Financial Health **A**

79 Emory University
Atlanta, GA
Undergrad pop. **7,836**
Total cost **$61,344**
Grateful Grad Rank **70** • Financial Health **A+**

80 Scripps College
Claremont, CA
Undergrad pop. **990**
Total cost **$63,740**
Grateful Grad Rank **N/A** • Financial Health **A+**

81 Trinity College
Hartford, CT
Undergrad pop. **2,301**
Total cost **$64,256**
Grateful Grad Rank **35** • Financial Health **A**

82 University of Texas, Austin
Austin, TX
Undergrad pop. **39,979**
Total cost **$26,346** in-state **/ $51,352** out-of-state
Grateful Grad Rank **N/A**

83 University of Florida
Gainesville, FL
Undergrad pop. **33,168**
Total cost **$20,553** in-state **/ $42,831** out-of-state
Grateful Grad Rank **N/A**

84 Sewanee–University of the South
Sewanee, TN
Undergrad pop. **1,620**
Total cost **$49,700**
Grateful Grad Rank **52** • Financial Health **A**

in California, Connecticut College, Swarthmore and Rollins College in Winter Park, Fla. Existing programs at schools are also becoming a larger part of campus life. Over 25% of students at both Middlebury and Colgate are actively involved with their schools' entrepreneurial initiatives.

As Sword & Plough continues to grow, Cavness found herself back at Middlebury's campus to mentor students during the past January term. Says Cavness, "To give back two and a half years later in the teaching and mentorship role was truly amazing." F

Most Entrepreneurial Research Universities

The usual suspects still rule. Newcomers: BYU, Northeastern and USF.

1 STANFORD UNIVERSITY
Design for Extreme Affordability challenges grad students to design lifesaving technologies and apply them to impoverished communities.

2 MASSACHUSETTS INSTITUTE OF TECHNOLOGY
A venture accelerator is a launchpad for student entrepreneurs, including up to $20,000 equity-free funding.

3 UNIVERSITY OF CALIFORNIA, BERKELEY
Cal Berkeley's Startup Competition has awarded nearly $1 million in prizes to budding companies.

4 CORNELL UNIVERSITY
This fall Cornell's Entrepreneurship Summit NYC will feature Philip Krim and Neil Parikh, founders of sleep startup Casper.

5 UNIVERSITY OF CALIFORNIA, LOS ANGELES
Students chosen to manage UCLA's Student Investment Fund control a $2 million portfolio.

6 CALIFORNIA INSTITUTE OF TECHNOLOGY
The Entrepreneurship Club hosts boot camps and takes students on field trips to Silicon Valley.

7 BROWN UNIVERSITY
VC-backed custom T-shirt platform Teespring was started by two seniors.

8 PRINCETON UNIVERSITY
Princeton hosts an annual startup competition and has a network of more than 10,000 entrepreneurial graduates.

9 DARTMOUTH COLLEGE
Spawned numerous iconic franchises, from Dr. Seuss and *Mother Jones* to BLACKprint, an Afrocentric media platform.

10 PEPPERDINE UNIVERSITY
Offers a master of arts in social entrepreneurship and change with emphasis on Christian values.

11 YALE UNIVERSITY
At Tuna Tank a student audience votes on business pitches using a mobile app.

12 RENSSELAER POLYTECHNIC INSTITUTE
The School of Management has eight Entrepreneurs in Residence, all successful business leaders.

13 NORTHEASTERN UNIVERSITY
It has partnered with more than 100 startup employers to connect students with six-month, full-time co-op experiences.

14 SOUTHERN METHODIST UNIVERSITY
An arts-entrepreneurship program is geared toward increasing the chances of making a living in the arts.

15 NEW YORK UNIVERSITY
It has a 6,000-square-foot lab for student entrepreneurs that features co-working spaces, an event space and a fabrication lab.

16 CLARK UNIVERSITY
An entrepreneurship class recently inspired Rebecca Liebman to create LearnLux, a leading interactive website that teaches financial literacy.

17 BRIGHAM YOUNG UNIVERSITY
Its Mobile App Competition, which recently awarded student developers nearly $16,000, is just one of many annual startup contests.

18 UNIVERSITY OF COLORADO, BOULDER
Its Center for Law, Technology & Entrepreneurship teaches crash courses on pitching to angel investors.

19 UNIVERSITY OF SAN FRANCISCO
The cofounders of Starbucks met at this school, and the coffee giant's green logo is a nod to the university.

20 HOWARD UNIVERSITY
It has 10,000-square-foot of space on campus set up for a Technology & Innovation Hub.

THE BEST 200

85 Santa Clara University
Santa Clara, CA
Undergrad pop. **5,435**
Total cost **$61,638**
Grateful Grad Rank **177** • Financial Health **B**

86 Wheaton College
Wheaton, IL
Undergrad pop. **2,444**
Total cost **$43,740**
Grateful Grad Rank **71** • Financial Health **A**

87 Dickinson College
Carlisle, PA
Undergrad pop. **2,396**
Total cost **$62,289**
Grateful Grad Rank **96** • Financial Health **A**

88 Skidmore College
Saratoga Springs, NY
Undergrad pop. **2,684**
Total cost **$62,750**
Grateful Grad Rank **82** • Financial Health **A-**

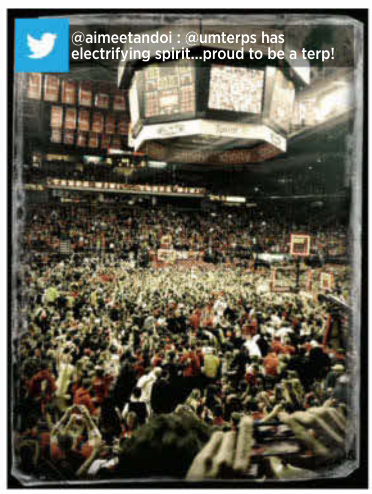
89 Centre College
Danville, KY
Undergrad pop. **1,381**
Total cost **$49,460**
Grateful Grad Rank **60** • Financial Health **A-**

90 Georgia Institute of Technology
Atlanta, GA
Undergrad pop. **14,558**
Total cost **$24,748** in-state / **$44,052** out-of-state
Grateful Grad Rank **N/A**

91 Boston University
Boston, MA
Undergrad pop. **18,165**
Total cost **$63,644**
Grateful Grad Rank **186** • Financial Health **B**

92 Connecticut College
New London, CT
Undergrad pop. **1,915**
Total cost **$62,895**
Grateful Grad Rank **65** • Financial Health **B+**

93 University of Maryland, College Park
College Park, MD
Undergrad pop. **26,658**
Total cost **$24,352** in-state / **$44,645** out-of-state
Grateful Grad Rank **N/A**



Amadou Crookes, Gabe Jacobs and Mario Gomez-Hall's new app is fueled by fresh cash and plenty of coffee.

JASON GROW FOR FORBES

Sharing That Song Inside Your Head

As app development explodes on campuses, three Tufts undergrads may have just created an Instagram for music lovers.

BY DENALI TIETJEN

When Gabriel Jacobs first began coding back in the 3G days of 2008, the ninth grader at New York City's Dalton School didn't tell his friends. He was too embarrassed. Staying up late teaching oneself how to code from YouTube videos was the opposite of cool. After all, Apple's iTunes App Store had just launched and celebrity-status billionaires like Instagram's Kevin Systrom and Snapchat's Evan Spiegel didn't yet exist.

But within a year Jacobs had created the ultimate cool app for a 14-year-old boy. His Fart for Free blew up among teenagers across the country, hitting No. 1 in the iTunes App Store for a hot minute and ultimately generating over 4 million downloads. Even before he could tell classmates it was his, they were already using the mobile whoopee cushion—with some 16 different fart sounds—to prank their friends.

Fast-forward seven years and Jacobs, 21, is on the cusp of cool again. His latest creation, called Cymbal, fills a strategic gap in the digital music business, which has yet to create a truly social experience for music lovers. The app, developed with fellow Tufts University students Amadou Crookes and Mario Gomez-Hall and launched just before their graduation in May, describes itself as "music discovery powered by friends, not algorithms."

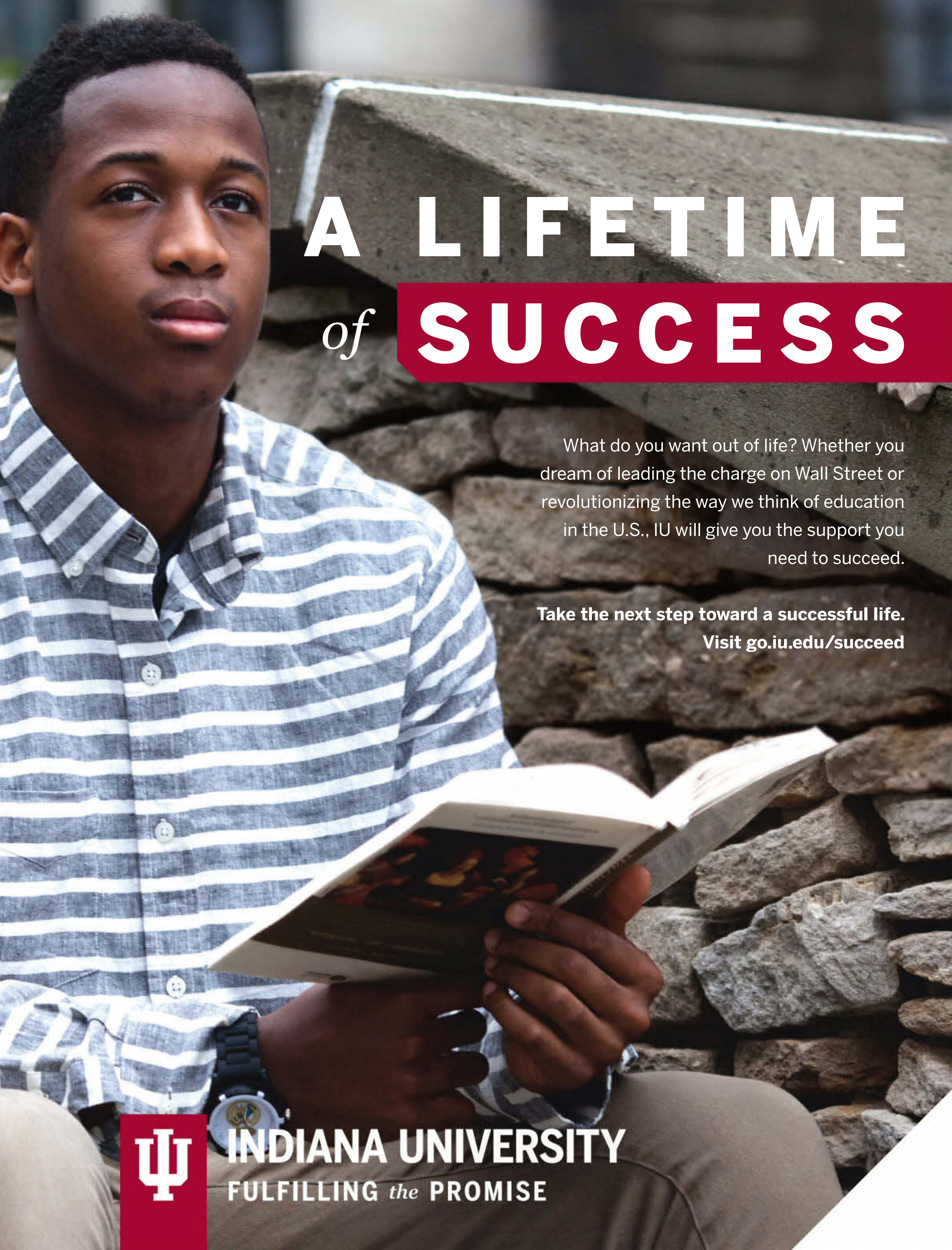
Think of Cymbal as an Instagram for music. The app adopts a simple interface embracing a "less is more" vibe, allowing users to post just one song, illustrated by colorful album art. Like Instagram, Cymbal involves a home feed, personal profile, followers, likes, comments, hashtags and tags. Your Cymbal is your song of the moment—that throwback you'd jam to in your basement in high school, that song your friend's band just released on SoundCloud. Your home feed, then, becomes an updated playlist curated by your friends, your profile: the soundtrack to your life.

In just a few months the app has been downloaded at least 17,000 times, spreading from the Medford, Mass. campus to colleges and high schools as far away as Los Angeles. The trio just landed $1.1 million in seed financing led by New York's Vaizra Investments (Yik Yak, Casper) and Cambridge's General Catalyst (Snapchat, Airbnb), valuing the freshly minted startup at $6.1 million.

"It was straight-up finals week," recalls Jacobs. "We weren't telling anyone because it'd be crazy when all our friends are studying for finals to be like 'Yeah, we just got $600,000.'"

The founders of Cymbal are part of a gold rush in mobile app development raging on campuses across the country. Ever since Angry Birds went viral and Twitter and Snapchat produced billionaires, enterprising undergraduates have seized upon the fact that the quickest path to riches is literally at their fingertips. Learning how to create an app for an iPhone or Android device is as easy as downloading free software from Apple or Google and slogging through a tutorial. Says Aaron Hillegass of Big Nerd Ranch, a firm that specializes in boot camps for developers, "It doesn't take a whole lot of money to develop an app, it takes a lot of energy and creativity."

Energy and creativity are in abundance among the three budding entrepreneurs who created Cymbal. All told the trio have so far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created 34 apps. Crookes' iJumbo app, for example, is used by nearly all Tufts undergrads on campus to find out everything from when the next shuttle bus is coming to what is being served at the dining halls.

One hook for Cymbal's moneyed backers may be the fact that the app doesn't threaten other music services but instead complements them. In the same way you'd upload an album of vacation photos to Facebook and the best one to Instagram, you create a whole playlist on Spotify and set the best one as your Cymbal. Indeed, the app already synchs with Spotify and SoundCloud. If you discover a song you love, you can add it to your Spotify library and like it on SoundCloud directly through the app. Who pays artist royalties when Cymbal users listen to songs? Not Cymbal, which is free. It merely streams the music from host libraries and piggybacks on the deals they have.

The idea for Cymbal evolved from a music blog Jacobs created as a sophomore in high school called Lower Frequencies. The blog had a simple mission: Review one great song per day. Four years and a thousand songs later Jacobs was bored. He wanted music to be a conversation. "I have this blog, but everyone should have this blog," Jacobs says.

In 2012 he met Crookes in Tufts' most notorious computer science class, Comp40: Machine Structure & Assembly-Language Programming. The pair bonded pulling all-nighters over homework projects. Meanwhile, Gomez-Hall, a human factors engineering major, was doing the same. The three coders developed a friendly rivalry, competing for spots on Tufts students' home screens. Gomez-Hall's apps consistently won on the front end; Jacobs and Crookes' won on the back end.

Last December the three united to transform Jacobs' blog concept into a social network for song sharing. When they launched in beta in March everyone wanted to be on it. "Every time we added someone to the beta, we got five or ten texts saying 'wtf dude, add me too,'" Gomez-Hall recalls. "Cymbal was blowing up."

Gomez-Hall and Crookes ditched their job offers at Microsoft and Google, and the coffee shop became their informal office. After-hours they met in the student center. "Sometimes we couldn't book a room in the campus center, so we'd have to take a call outside," Crookes says. "It was freaking cold."

On May 1 Cymbal went live on Apple's App Store. Within two weeks the app was on nearly all Tufts iPhones and has since traveled rapidly around the nation as students returned home for break.

"I downloaded it four days ago, and I've been like freakishly telling people about it because I think it's really cool," says Kellie Mardula, a rising junior at Boston University who is also a DJ at BU's WTBU. Mardula recently discovered indie band Parquet Courts. "One of my friends Cymbaled them, and now I love that band."

Meanwhile, the trio haven't had much time to bask in the glow of their recent graduation. Embracing their nerdy side, a recent update added a Venn diagram feature that represents users who have set the same Cymbal so you can discover users with shared musical tastes. They're hiring developers, and in the fall will move offices to Brooklyn. An Android version will soon be released in beta, and a campus ambassador marketing program is in the works.

Even if Cymbal fails to gain Instagram-like success, its 15 minutes of fame will produce long-term dividends for Tufts, which now counts computer science as its most popular major. Comp sci professor Ben Hescott is already beaming. "Either someone's going to buy it, like Apple, or people are going to be talking about it because it's something they're using." F

THE BEST 200

94 Occidental College
Los Angeles, CA
Undergrad pop. **2,128**
Total cost **$64,804**
Grateful Grad Rank **81** • Financial Health **A**

95 Mount Holyoke College
South Hadley, MA
Undergrad pop. **2,183**
Total cost **$57,046**
Grateful Grad Rank **62** • Financial Health **A**

96 Denison University
Granville, OH
Undergrad pop. **2,274**
Total cost **$58,700**
Grateful Grad Rank **87** • Financial Health **A**

97 Wofford College
Spartanburg, SC
Undergrad pop. **1,615**
Total cost **$51,504**
Grateful Grad Rank **56** • Financial Health **B**

98 Rhodes College
Memphis, TN
Undergrad pop. **2,027**
Total cost **$55,644**
Grateful Grad Rank **78** • Financial Health **A-**

99 University of Richmond
Richmond, VA
Undergrad pop. **3,215**
Total cost **$59,630**
Grateful Grad Rank **118** • Financial Health **A+**

100 Trinity University
San Antonio, TX
Undergrad pop. **2,161**
Total cost **$50,550**
Grateful Grad Rank **131** • Financial Health **A**

List continues on page 98

HOW WE DO OUR RANKING

The FORBES Top Colleges list focuses on five metrics: Student satisfaction (25%) measures teaching and quality, student experience and retention rates. Postgraduate success (32.5%) tracks alumni salaries and leaders in their chosen fields. Student debt (25%) analyzes federal loan debt load, default rates and number of students taking out federal loans. Finally, schools are given points for high four-year graduation rates (7.5%) and alumni academic success (10%). This is the inaugural year for a three-year moving average of the schools' overall scores found in 2013–15.

FORBES FINANCIAL GRADES (IN RED) measures nine fiscal factors critical to determining a private institution's balance sheet health (40%) and operational soundness (35%). Other indicative factors include admissions yield (10%), freshmen receiving institutional grants (7.5%) and instructional expenses per full-time student (7.5%). Edited by Matt Schifrin.

FORBES GRATEFUL GRAD RANK (IN RED). See page 26 for methodology.

CREDITS: Rankings prepared exclusively for FORBES by the Center for College Affordability & Productivity under the direction of Richard Vedder, Ph.D. Reporters: Jill Castellano, Lauren Feiner, Karen Hua, Maxine Joselow, Sergei Klebnikov, and Natalie Sportelli, with Arnold Ching and Elisabeth Schifrin.

For full coverage, go to Forbes.com/colleges.

101 United States Coast Guard Academy
New London, CT
Undergrad pop. **902**
Total cost **$2,393**
Grateful Grad Rank **N/A**

102 University of Georgia
Athens, GA
Undergrad pop. **26,278**
Total cost **$22,680 / $40,890**
Grateful Grad Rank **N/A**

103 University of California, Santa Barbara
Santa Barbara, CA
Undergrad pop. **19,362**
Total cost **$34,753 / $57,631**
Grateful Grad Rank **N/A**

104 Brigham Young University
Provo, UT
Undergrad pop. **27,765**
Total cost **$17,818**
Grateful Grad Rank **N/A**

105 Kalamazoo College
Kalamazoo, MI
Undergrad pop. **1,458**
Total cost **$52,654**
Grateful Grad Rank **N/A**

106 Saint Olaf College
Northfield, MN
Undergrad pop. **3,125**
Total cost **$53,100**
Grateful Grad Rank **112**

107 George Washington University
Washington, DC
Undergrad pop. **10,357**
Total cost **$63,210**
Grateful Grad Rank **305**

108 Southern Methodist University
Dallas, TX
Undergrad pop. **6,357**
Total cost **$63,985**
Grateful Grad Rank **N/A**

109 Pitzer College
Claremont, CA
Undergrad pop. **1,081**
Total cost **$63,750**
Grateful Grad Rank **116**

110 Furman University
Greenville, SC
Undergrad pop. **2,797**
Total cost **$59,051**
Grateful Grad Rank **88**

111 Gettysburg College
Gettysburg, PA
Undergrad pop. **2,524**
Total cost **$60,320**
Grateful Grad Rank **117**

112 Indiana University, Bloomington
Bloomington, IN
Undergrad pop. **36,862**
Total cost **$24,417 / $47,270**
Grateful Grad Rank **N/A**

113 Case Western Reserve University
Cleveland, OH
Undergrad pop. **4,661**
Total cost **$59,634**
Grateful Grad Rank **47**

114 University of Colorado Boulder
Boulder, CO
Undergrad pop. **26,096**
Total cost **$30,025 / $52,387**
Grateful Grad Rank **N/A**

115 Saint John's College (MD)
Annapolis, MD
Undergrad pop. **443**
Total cost **$60,376**
Grateful Grad Rank **N/A**

116 Hampshire College
Amherst, MA
Undergrad pop. **1,492**
Total cost **$62,015**
Grateful Grad Rank **155**

117 Earlham College
Richmond, IN
Undergrad pop. **1,064**
Total cost **$54,470**
Grateful Grad Rank **98**

118 Sarah Lawrence College
Bronxville, NY
Undergrad pop. **1,471**
Total cost **$66,392**
Grateful Grad Rank **101**

119 Bennington College
Bennington, VT
Undergrad pop. **619**
Total cost **$64,019**
Grateful Grad Rank **N/A**

120 Hobart & William Smith Colleges
Geneva, NY
Undergrad pop. **2,368**
Total cost **$62,034**
Grateful Grad Rank **93**

121 University of California, Davis
Davis, CA
Undergrad pop. **26,533**
Total cost **$33,759 / $56,637**
Grateful Grad Rank **N/A**

122 Virginia Tech
Blacksburg, VA
Undergrad pop. **24,034**
Total cost **$25,837 / $41,868**
Grateful Grad Rank **N/A**

123 University of California, San Diego
La Jolla, CA
Undergrad pop. **23,805**
Total cost **$31,254 / $54,132**
Grateful Grad Rank **N/A**

124 College of the Atlantic
Bar Harbor, ME
Undergrad pop. **362**
Total cost **$51,471**
Grateful Grad Rank **N/A**

125 Bard College
Annandale-on-Hudson, NY
Undergrad pop. **2,014**
Total cost **$64,712**
Grateful Grad Rank **N/A**

126 Rensselaer Polytechnic Institute
Troy, NY
Undergrad pop. **5,452**
Total cost **$64,198**
Grateful Grad Rank **144**

127 University of Miami
Coral Gables, FL
Undergrad pop. **11,380**
Total cost **$62,854**
Grateful Grad Rank **55**

128 Pepperdine University
Malibu, CA
Undergrad pop. **3,538**
Total cost **$63,482**
Grateful Grad Rank **333**

129 Lawrence University
Appleton, WI
Undergrad pop. **1,553**
Total cost **$53,790**
Grateful Grad Rank **63**

130 University of Minnesota, Twin Cities
Twin Cities, MN
Undergrad pop. **34,449**
Total cost **$25,674 / $32,924**
Grateful Grad Rank **N/A**

131 Virginia Military Institute
Lexington, VA
Undergrad pop. **1,675**
Total cost **$27,040 / $49,096**
Grateful Grad Rank **N/A**

132 Providence College
Providence, RI
Undergrad pop. **4,135**
Total cost **$59,110**
Grateful Grad Rank **170**

133 Saint Lawrence University
Canton, NY
Undergrad pop. **2,414**
Total cost **$61,632**
Grateful Grad Rank **76**

134 Tulane University
New Orleans, LA
Undergrad pop. **8,290**
Total cost **$63,108**
Grateful Grad Rank **126**

135 American University
Washington, DC
Undergrad pop. **7,340**
Total cost **$59,120**
Grateful Grad Rank **280**

136 Purdue University, West Lafayette
West Lafayette, IN
Undergrad pop. **30,446**
Total cost **$23,002 / $41,804**
Grateful Grad Rank **N/A**

137 Hendrix College
Conway, AR
Undergrad pop. **1,431**
Total cost **$54,302**
Grateful Grad Rank **90**

138 Willamette University
Salem, OR
Undergrad pop. **2,119**
Total cost **$57,046**
Grateful Grad Rank **216**

139 Colorado School of Mines
Golden, CO
Undergrad pop. **4,291**
Total cost **$31,417 / $48,097**
Grateful Grad Rank **N/A**

140 College of Wooster
Wooster, OH
Undergrad pop. **2,116**
Total cost **$55,500**
Grateful Grad Rank **69**

141 Syracuse University
Syracuse, NY
Undergrad pop. **15,097**
Total cost **$59,320**
Grateful Grad Rank **279**

142 University of Delaware
Newark, DE
Undergrad pop. **18,487**
Total cost **$26,200 / $44,550**
Grateful Grad Rank **N/A**

143 University of Denver
Denver, CO
Undergrad pop. **5,517**
Total cost **$57,498**
Grateful Grad Rank **257**

144 Muhlenberg College
Allentown, PA
Undergrad pop. **2,448**
Total cost **$57,030**
Grateful Grad Rank **176**

145 Drake University
Des Moines, IA
Undergrad pop. **3,383**
Total cost **$46,316**
Grateful Grad Rank **265**

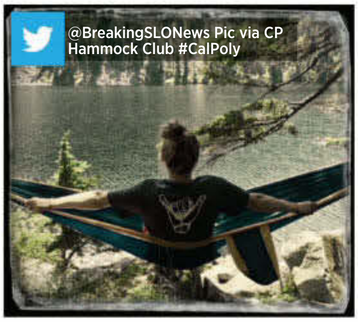
146 Rutgers University, New Brunswick
New Brunswick, NJ
Undergrad pop. **33,901**
Total cost **$29,933 / $44,711**
Grateful Grad Rank **N/A**

147 University of California, Irvine
Irvine, CA
Undergrad pop. **23,530**
Total cost **$31,577 / $54,455**
Grateful Grad Rank **N/A**

148 Lewis & Clark College
Portland, OR
Undergrad pop. **2,126**
Total cost **$57,690**
Grateful Grad Rank **233**

149 Loyola Marymount University
Los Angeles, CA
Undergrad pop. **6,205**
Total cost **$58,851**
Grateful Grad Rank **N/A**

150 Texas A&M University, College Station
College Station, TX
Undergrad pop. **44,072**
Total cost **$22,975 / $39,873**
Grateful Grad Rank **N/A**



151 Worcester Polytechnic Institute
Worcester, MA
Undergrad pop. **4,134**
Total cost **$59,504**
Grateful Grad Rank **171**

152 Pennsylvania State University, University Park
State College, PA
Undergrad pop. **40,085**
Total cost **$34,598 / $47,548**
Grateful Grad Rank **N/A**

153 Fordham University
Bronx, NY
Undergrad pop. **8,345**
Total cost **$65,330**
Grateful Grad Rank **229**

154 SUNY, Binghamton (Binghamton University)
Binghamton, NY
Undergrad pop. **12,997**
Total cost **$23,648 / $35,288**
Grateful Grad Rank **N/A**

155 Ohio State University, Columbus
Columbus, OH
Undergrad pop. **44,201**
Total cost **$25,785 / $42,285**
Grateful Grad Rank **N/A**

156 University of Vermont
Burlington, VT
Undergrad pop. **10,912**
Total cost **$29,674 / $51,322**
Grateful Grad Rank **N/A**

157 Marquette University
Milwaukee, WI
Undergrad pop. **8,365**
Total cost **$50,237**
Grateful Grad Rank **163**

158 Beloit College
Beloit, WI
Undergrad pop. **1,306**
Total cost **$52,270**
Grateful Grad Rank **75**

159 Hope College
Holland, MI
Undergrad pop. **3,388**
Total cost **$41,210**
Grateful Grad Rank **122**

160 Elon University
Elon, NC
Undergrad pop. **5,599**
Total cost **$45,414**
Grateful Grad Rank **168**

161 Loyola University Maryland
Baltimore, MD
Undergrad pop. **4,004**
Total cost **$59,925**
Grateful Grad Rank **340**

162 University of Connecticut
Storrs, CT
Undergrad pop. **18,032**
Total cost **$28,274 / $48,454**
Grateful Grad Rank **N/A**

163 Clark University
Worcester, MA
Undergrad pop. **2,380**
Total cost **$50,280**
Grateful Grad Rank **N/A**

164 California Polytechnic State University, San Luis Obispo
San Luis Obispo, CA
Undergrad pop. **18,739**
Total cost **$24,683/ $35,843**
Grateful Grad Rank **N/A**

165 Knox College
Galesburg, IL
Undergrad pop. **1,424**
Total cost **$51,121**
Grateful Grad Rank **77**

166 University of Redlands
Redlands, CA
Undergrad pop. **3,607**
Total cost **$60,874**
Grateful Grad Rank **267**

167 Miami University, Oxford
Oxford, OH
Undergrad pop. **15,462**
Total cost **$29,423 / $45,527**
Grateful Grad Rank **N/A**

168 Wabash College
Crawfordsville, IN
Undergrad pop. **902**
Total cost **$49,380**
Grateful Grad Rank **N/A**

169 University of Puget Sound
Tacoma, WA
Undergrad pop. **2,544**
Total cost **$57,908**
Grateful Grad Rank **178**

170 Michigan State University
East Lansing, MI
Undergrad pop. **37,985**
Total cost **$25,350 / $47,115**
Grateful Grad Rank **N/A**

171 Wheaton College
Norton, MA
Undergrad pop. **1,654**
Total cost **$60,263**
Grateful Grad Rank **95**

172 Clemson University
Clemson, SC
Undergrad pop. **16,931**
Total cost **$29,150 / $47,166**
Grateful Grad Rank **N/A**

173 University of Tulsa
Tulsa, OK
Undergrad pop. **3,428**
Total cost **$52,055**
Grateful Grad Rank **48**

174 University of Portland
Portland, OR
Undergrad pop. **3,494**
Total cost **$56,202**
Grateful Grad Rank **N/A**

175 University of California, Santa Cruz
Santa Cruz, CA
Undergrad pop. **15,695**
Total cost **$34,226 / $57,104**
Grateful Grad Rank **N/A**

176 Westmont College
Santa Barbara, CA
Undergrad pop. **1,308**
Total cost **$55,570**
Grateful Grad Rank **64**

177 CUNY, City College
New York, NY
Undergrad pop. **12,501**
Total cost **$27,277 / $34,087**
Grateful Grad Rank **N/A**

178 Creighton University
Omaha, NE
Undergrad pop. **4,076**
Total cost **$49,356**
Grateful Grad Rank **127**

179 Juniata College
Huntingdon, PA
Undergrad pop. **1,625**
Total cost **$51,190**
Grateful Grad Rank **106**

180 North Carolina State University, Raleigh
Raleigh, NC
Undergrad pop. **24,536**
Total cost **$22,954 / $38,209**
Grateful Grad Rank **N/A**

181 Fairfield University
Fairfield, CT
Undergrad pop. **3,873**
Total cost **$59,840**
Grateful Grad Rank **198**

182 College of New Jersey
Ewing, NJ
Undergrad pop. **6,653**
Total cost **$30,793 / $41,406**
Grateful Grad Rank **N/A**

183 Calvin College
Grand Rapids, MI
Undergrad pop. **3,959**
Total cost **$42,620**
Grateful Grad Rank **115**

184 Gustavus Adolphus College
St. Peter, MN
Undergrad pop. **2,449**
Total cost **$51,540**
Grateful Grad Rank **122**

185 James Madison University
Harrisonburg, VA
Undergrad pop. **18,431**
Total cost **$24,012 / $38,872**
Grateful Grad Rank **N/A**

186 Hillsdale College
Hillsdale, MI
Undergrad pop. **1,472**
Total cost **$34,352**
Grateful Grad Rank **N/A**

187 Gonzaga University
Spokane, WA
Undergrad pop. **4,896**
Total cost **$50,501**
Grateful Grad Rank **217**

188 Emerson College
Boston, MA
Undergrad pop. **3,758**
Total cost **$55,846**
Grateful Grad Rank **380**

189 Bentley University
Waltham, MA
Undergrad pop. **4,247**
Total cost **$58,860**
Grateful Grad Rank **370**

190 Saint Michael's College
Colchester, VT
Undergrad pop. **1,998**
Total cost **$52,155**
Grateful Grad Rank **204**

191 Louisiana State University
Baton Rouge, LA
Undergrad pop. **24,923**
Total cost **$24,150 / $41,867**
Grateful Grad Rank **N/A**

192 Saint John's University (MN)
Collegeville, MN
Undergrad pop. **1,871**
Total cost **$50,384**
Grateful Grad Rank **103**

193 University of Utah
Salt Lake City, UT
Undergrad pop. **24,492**
Total cost **$22,737 / $39,959**
Grateful Grad Rank **N/A**

194 Southwestern University
Georgetown, TX
Undergrad pop. **1,535**
Total cost **$49,090**
Grateful Grad Rank **85**

195 College of Idaho
Caldwell, ID
Undergrad pop. **1,095**
Total cost **$36,579**
Grateful Grad Rank **100**

196 Transylvania University
Lexington, KY
Undergrad pop. **1,082**
Total cost **$45,760**
Grateful Grad Rank **80**

197 Baylor University
Waco, TX
Undergrad pop. **13,292**
Total cost **$53,960**
Grateful Grad Rank **289**

198 Manhattan College
Riverdale, NY
Undergrad pop. **3,403**
Total cost **$54,128**
Grateful Grad Rank **N/A**

199 University of Iowa
Iowa City, IA
Undergrad pop. **21,974**
Total cost **$20,861 / $40,191**
Grateful Grad Rank **N/A**

200 University of Arizona
Tucson, AZ
Undergrad pop. **31,670**
Total cost **$25,157 / $43,621**
Grateful Grad Rank **N/A**

List of confirmed speakers as of July 14, 2015


Steve Forbes
Chairman & Editor-in-Chief, Forbes Media, USA


Cesar V. Purisima
Secretary of Finance, Republic of the Philippines


Liang Xinjun
Vice Chairman & CEO, Fosun International, China


Teresita Sy-Coson
Vice Chairperson, SM Investments Corporation, Chairperson, BDO Unibank, Philippines


Michael Hintze
Chief Executive, CQS, United Kingdom


Enrique K. Razon Jr.
Chairman & President, International Container Terminal Services, Inc., Philippines


Mario Moretti Polegato
Chairman, GEOX Group, Italy


Lindsay Fox
Founder, Linfox, Australia


Ramon S. Ang
President & COO, San Miguel Corporation, Philippines


David K.P. Li
Chairman & Chief Executive, The Bank of East Asia, Hong Kong


Chairul Tanjung
Chairman, CT Corporation, Indonesia


Vincent Tan
Founder, Berjaya Corporation Group of Companies, Malaysia


Dr. Tahir
Chairman & CEO, Mayapada Group, Indonesia


Shikha Sharma
MD & CEO, Axis Bank, India


Hiromichi Mizuno
Executive MD & CIO, Government Pension Investment Fund, Japan


Manuel B. Villar, Jr.
Chairman, Vista Land & Lifescapes/Starmalls, Philippines


Sam Goi
Executive Chairman, Tee Yih Jia Group, Singapore


Mike Perlis
President & CEO, Forbes Media, USA


Douglas Hsu
Chairman & CEO, Far Eastern Group, Taiwan


Raj Kumar
Group Chairman, Royal Holdings, Singapore


Beth A. Brooke-Marciniak
Global Vice Chair, Public Policy, EY, USA


John Riady
Executive Director, Lippo Group, Indonesia


Ron Sim
CEO, OSIM International, Singapore


Noni Purnomo
President Director, Blue Bird Group Holding, Indonesia


Sri Prakash Lohia
Group Chairman, Indorama Group, Indonesia


Goh Peng Ooi
Group Executive Chairman, Silverlake Axis, Malaysia


Yoshito Hori
President, GLOBIS University, Managing Partner, GLOBIS Capital Partners, Japan


Wendy Yap
President & CEO, Nippon Indosari Corpindo, Indonesia


Steven Pan
Executive Chairman, Regent Hotels & Resorts, Taiwan


Binod K. Chaudhary
President, Cinnovation-Chaudhary Group, Nepal


William E. Heinecke
Chairman & CEO, Minor International, Thailand


Forrest Li
Chairman & Group CEO, Garena, Singapore


James E. Thompson
Chairman, Crown Worldwide Group of Companies, Hong Kong


Serge Pun
Chairman, SPA Group, Myanmar


Romi Haan
President & CEO, HAAN Corporation, South Korea


Rich Karlgaard
Publisher, Forbes magazine, USA


Vishal Sikka
CEO & MD, Infosys, USA


Joseph E. Aoun
President, Northeastern University, USA


Henry Nguyen
Managing General Partner, IDG Ventures Vietnam, Vietnam


Gary Rieschel
Managing Partner, Qiming Venture Partners, China

FRANCO VOGT FOR FORBES

NIMBY NATION

FUELED BY LEGAL ADVOCACY GROUPS, CRIES OF "NOT IN MY BACKYARD" ARE QUIETLY COSTING THE UNITED STATES ECONOMY TRILLIONS. THE ABILITY FOR AMERICA TO FLOURISH IS AT STAKE.

BY CHRISTOPHER HELMAN AND DANIEL FISHER

FOR MORE THAN 50 YEARS Onyx Specialty Papers of South Lee, Mass. has carved out a niche selling unusual, high-value products like the Kevlar-reinforced paper used in automobile clutch plates. The company's twin 100-foot-long paper machines sit in a 150-year-old brick building on the Housatonic River, churning out 12,000 tons of paper a year.

Pat Begrowicz and a business partner bought Onyx from industry giant Mead Westvaco in 2009. She cashed in her kids' college funds to do so. Now she's wondering whether that was such a great idea. The problem isn't labor (starting pay for manufacturing jobs at her 155-employee company is $20 an hour) or even raw materials costs or markets. It's energy.

Massachusetts has the third-highest electricity costs in the lower 48 states, after Connecticut and Rhode Island. Begrowicz pays about 14 cents per kilowatt-hour, more than double the national average of 6.5 cents. As a result, she figures she pays $1.2 million a year more than she needs to in order to run her machines. She takes a hit on natural gas as well, which Onyx burns to produce steam for the big revolving steel cylinders that dry the paper pulp slurry. Gas prices in Massachusetts, which also drive the high cost of electricity, are two times higher (about $11 per thousand cubic feet) than the national average. "I can't recoup it," she says, shaking her head.

The painful irony, of course, is that America sits in the midst of a historic natural gas boom that has seen prices plunge more than 75% since 2008. Just 200 miles to the southwest of South Lee lies the Marcellus Shale natural gas

field of Pennsylvania, the biggest in America. From nothing a decade ago the Marcellus now produces 16.5 billion cubic feet of natural gas per day, about 20% of the national total. Pipeline companies are itching to extend their lines to bring plentiful gas into Massachusetts; Kinder Morgan has already signed up long-term buyers for the gas it would haul in via its stalled $3.3 billion Northeast Direct line.

But that's not going to happen, at least not anytime soon. Despite the fact that Western Massachusetts' GDP plunged 3.6% from 2007–13 (while the U.S. overall expanded 5.6% over the same time), opposition by small, well-organized groups to any new pipeline remains as ferocious as it is irrational. "We want to prevent the overbuilding of gas infrastructure and overreliance on gas, for economic reasons and climate reasons," says Kathryn Eiseman, head of Massachusetts PipeLine Awareness Network advocacy group. Yet thanks to her group and others like it, in January 2014 New England's power companies, lacking gas to make electricity, resorted to burning 2.7 million barrels of emergency fuel oil—more expensive and far more toxic, pumping out twice as much carbon dioxide as natural gas. So much for "economic and climate reasons."

Call such irrationality the NIMBY tax—the unnecessary, exorbitant and more and more common cost of getting anything done in America. From subways to bridges to power lines and pipelines, the nation's land, water and key infrastructure is increasingly being held hostage by a growing thicket of regulation, sophisticated opposition and a me-first philosophy that regards development, no matter the public good, as a potential assault on the sacred. From housing construction caps in San Francisco and the Keystone XL pipeline in Nebraska to bridge and subway construction in New York City and port expansion in Savannah, Ga., NIMBY has delayed, killed or inflated the expenses of more than 500 projects nationwide over the last decade at a cost to the economy of more than $1 trillion annually, FORBES conservatively estimates, though in truth those numbers are likely far higher.

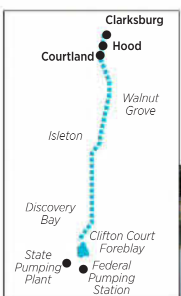
The problem is being exacerbated by a furious wave of regulation-writing in Washington. According to the Government Accountability Office, the Obama Administration enacted 499 major rules across all federal agencies in its first six years, up 43% from the first six years of the George W. Bush White House. The GAO defines "major" regulations as having an annual effect of more than $100 million on the economy or significant impacts on prices, productivity, employment or international competitiveness. This summer, new regulations issued by the Environmental Protection Agency expanded the waterways over which it has some say by 4.6 million miles, infuriating landowners across the nation.

"What has happened by accident is that the legal approval system has evolved to be so complicated that any person who doesn't like a project can exercise a legal veto," says Philip K. Howard, whose new book, *The Rule of No-*

JUST SAY NO

WHO SAYS AMERICANS CAN'T AGREE ON ANYTHING ANYMORE? HERE'S A PORTFOLIO OF MEGAPROJECTS FROM ACROSS THE NATION, ALL STALLED BY NIMBY.

THE CAPE WIND PROJECT
The first permits to build a wind farm off Cape Cod were filed in 2001. Despite continued support from the state, feds and lenders, the $2.5 billion project has been stalled by rich NIMBYs (both Kochs and Kennedys among them) who don't want the turbines in view.



BAY DELTA CONSERVATION PLAN
In drought-stricken California, projects like a $15.5 billion plan to deliver water 30 miles from the Sacramento River to the thirsty agricultural Central Valley have been blocked by NIMBYs for decades.

PORT OF SAVANNAH
Plans to deepen the nation's fourth-busiest container port have dragged since 1999. Holding up the $700 million plan: lawsuits over the impact to estuaries and sea turtles and efforts to recover the remains of a Confederate warship. Work may finally begin later this year.

AP PHOTO/RICH PEDRONCELLI; AP PHOTO/STEPHEN B. MORTON; GETTY IMAGES

EXPANDING I-95 IN CONNECTICUT
The interstate between Greenwich and New Haven is one of the most congested in the nation, but a proposed expansion riled nervous property owners and businesses along the route.

body, documents the madness. The effect, Howard says, is "bureaucratic mental illness." It's the kind of sickness that now threatens a country that was once defined by advancement and progress.

OF COURSE, IT WAS NOT always like this. From the global trade booms brought about by the Erie and Panama canals to Depression-era electrification programs that lifted millions of Americans out of poverty and darkness to the rollout of the Interstate Highway System, which transformed the country into a single, seamless economy, the history of the United States was once the history of watershed infrastructure projects, completed quickly, and the opportunities they created.

But by the 1960s the pendulum had swung too far, most famously in New York, where an unparalleled public construction boom driven by the Triborough Bridge & Tunnel Authority's bare-knuckle chairman, Robert Moses, overshot the mark, destroying neighborhoods and rending the city's social fabric, igniting a revolt against the bulldozer-driven "urban renewal" movement of the time.

CHRIS WARE/ BLOOMBERG NEWS; AP PHOTO/JOHN LOCHER

YUCCA MOUNTAIN
Studied and engineered for more than 30 years, this Nevada salt mine was supposed to warehouse America's spent nuclear fuel, but NIMBYs opposed it all the way. In 2010 the Obama Administration, at Senator Harry Reid's (D–Nev.) behest, shut down all funding.

Meanwhile, Americans woke up to the reality that rampant industrialization was destroying the environment. In 1962 Rachel Carson published *Silent Spring,* which led directly to the banning of the toxic pesticide DDT. In 1963 the Clean Air Act was passed in part to alleviate L.A.'s noxious smog. In 1970 President Richard Nixon created the Environmental Protection Agency. That same year was the first Earth Day. In 1978 toxic horrors were discovered under a new housing development at Love Canal, N.Y., leading to the 1980 creation of the Federal Superfund program to clean up industrial disasters. That same year marks the first recorded usage of the phrase "Not in My Backyard."

It didn't take long for newly minted NIMBYs to realize the tools they had been handed. The law that created the EPA required all sizable federal project plans to include an environmental impact statement. Courts decided that it wasn't enough to declare what the impacts would be—agencies also had to inform the public on how they intended to address those impacts. The problem, though, is that every agency can weigh in on environmental impacts, but no single agency has authority over the process, allowing environmentalists to litigate over every word in every impact statement. Richard Geddes of the American Enterprise Institute says one local transportation official told him that "if I take $1 of federal money for a state transportation project, it can add 11 years to the process."

Forty-five years later the unanticipated result is a sophisticated NIMBY-industrial complex of activists and lawyers that has grown increasingly proficient at weaponizing all this well-intended regulation to stall even green projects and explode their costs.

Take Vermont, where New England NIMBYs sought to block an electric transmission project that would bring zero-carbon hydropower to the region from Canada. The plan, proposed by the company Transmission Developers, owned by Blackstone Group, is to build a 1,000-megawatt line under Lake Champlain to Ludlow, Vt., where it would patch into the grid near the decommissioned Vermont Yankee nuclear plant (closed in 2014 due to pressure by activists who—you guessed it—didn't want a reactor operating in their backyard).

But if you think subbing hydropower for nuclear power would satisfy the region's NIMBY forces, think again. Boston's Conservation Law Foundation intervened because of the plan's "impact on the aquatic environment" and potential competition with renewable projects in New England. Greg Cunningham, CLF vice president and director of its Clean Energy and Climate Change program, explains that hydropower "is not a zero-carbon resource, so that needs to be accounted for." Dams, he says, create sediments that release higher levels of CO_2 in their early years, and the land behind the dam needs to be clear-cut of CO_2-absorbing trees to make way for the reservoir. Faced with the

potential for endless litigation, Transmission Developers CEO Don Jessome cut a deal with the NIMBYs: Drop your opposition and in return we will invest nearly $300 million over 40 years on Conservation Law Foundation pet causes like solar and wind.

This group offers a perfect example of the sophisticated way the NIMBY industry works today. While it doesn't stand to make any money directly from this settlement unless Transmission Developers violates its terms, that's hardly the norm for this lawyer-driven organization, which frequently sues small businesses for alleged violations of environmental laws. A scan of federal court records shows it has filed 14 such suits in the last two years and more than 100 since 1987, including a string of cases against marinas, used-car lots and other companies the Conservation Law Foundation accuses of polluting lakes and rivers. In most cases the foundation initiates the complaint based upon an aerial inspection and negotiates a "consent decree" filed with the court under which the nonprofit agrees to drop its charges in exchange for tens of thousands of dollars in legal fees payable to it and similar-size donations to environmental groups it selects.

Most of the targets FORBES contacted declined to talk on the record, citing confidentiality agreements, but one did: John Jalbert, owner of Methuen Motor Mart in Methuen, Mass., who agreed in April 2015 to pay the Conservation Law Foundation $30,000 over three years and another $20,000 in the form of donations to a local group. Jalbert's crime? His lot is situated next to the Merrimack River, and the foundation determined from a Google Earth photograph he might be polluting the river with oil and other substances from his cars—even though Jalbert says he has berms to protect against it and the consent agreement doesn't require him to do anything more than agree not to pollute in the future.

"They came at me like a bulldog," says Jalbert, even though he says no one from the foundation ever visited his location. (CLF says it did.) He refused to pay additional "monitoring fees" the group ordinarily charges its targets. "Thank God I fought 'em on that, or they'd be down at my business every year, ringing my bell for money."

This group and other organizations like Riverkeeper and WildEarth Guardians leverage the "citizen suit" provisions Congress inserted into federal environmental laws to allow neighbors and others to sue over pollution. It can also feel like a shakedown—it's cheaper, after all, for a small businesses to pay $20,000 to $50,000 in fees to make something go away, rather than fight a small army of environmental lawyers.

"It's quite lucrative," says Francis Veale, who represented Jalbert. "They come in under the banner of they're the white knights, but when you're going to put a small guy who employs five to ten people out of business, that's not so good." Cunningham, of the Conservation Law Foundation, counters that the organization merely ensures adherence to federal environmental laws and sues companies when they are out of compliance with necessary permits.

KEYSTONE XL PIPELINE
Plans for an $8 billion, 1,200-mile line from Canada to Texas were derailed by environmental groups over charges that the pipe would be more risky than the 190,000 miles of petroleum pipelines already crossing America.

LAWMAKERS ON BOTH SIDES of the aisle, and even some activist groups, to their credit, recognize there's a problem. The American Recovery and Reinvestment Act of 2009 included language that encouraged faster permitting, though there's little evidence it succeeded. This year Senators Rob Portman (R.–Ohio) and Claire McCaskill (D.–Mo.) introduced the Federal Permitting Improvement Act of 2015, which would streamline the environmental approval process and interagency coordination. The bill has bipartisan support and is even backed by the National Resources Defense Council.

And then there's the Responsibly and Professionally In-

CALIFORNIA HIGH-SPEED RAIL
Construction is under way on the first segment of this $68 billion project, but pushback from farmers in the Central Valley ensures that acquiring the land needed to finish the job will require expensive eminent domain.

ANDREW BURTON/GETTY IMAGES

NEW YORK STATE'S FRACKING BAN
Despite a multiyear study by the EPA finding no reason to believe that fracking contributes to groundwater pollution, Governor Andrew Cuomo buckled to pressure by environmental groups and blocked development in one of the state's poorest regions.

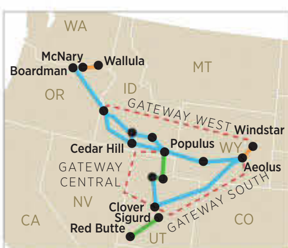
vigorating Development (RAPID) Act, which would speed permitting and remove duplicate processes. It passed the House last year. "Everybody agrees that approving critically important economic projects should be simple," says bill sponsor Representative Tom Marino (R–Pa.).

Even the Supreme Court did its part, ruling in June's *Michigan v. Environmental Protection Agency* decision that the agency should not be imposing draconian new air pollution rules (on mercury emissions in this case) without first considering the costs of implementation.

But just as quickly as red tape appears to get cut back, NIMBY lawyers find more ways to tie everything up. The latest legal tactic is so-called Title V litigation, based on a provision of federal law requiring the EPA to approve or deny a clean air permit application within 18 months. The EPA misses that deadline more than 80% of the time, and groups like the Sierra Club and WildEarth Guardians use the delays to try to block gas compressor stations and other critical elements of the energy grid.

ANDREW BURTON/GETTY IMAGES; ALAMY

ENERGY GATEWAY TRANSMISSION PROJECT
PacifiCorp has been battling environmental groups for almost a decade to develop a critical \$6 billion plan to build 2,000 miles of wire that will carry 4,500MW of power (mostly from wind turbines) through Utah, Wyoming and Idaho. A big obstacle: sage grouse.



Title V "is the basic air permit you need to build anything," says William Kovacs, senior vice president for environment, technology and regulatory affairs with the U.S. Chamber of Commerce. "That sets in motion how the environmental groups control the EPA," Kovacs says. "It's missing the deadline that gives the environmental groups their leverage." The EPA did not respond to requests for comment.

WildEarth has filed 53 suits in federal court since 2012, including one targeting 13 compressor stations and other gas-processing facilities owned by Anadarko, Whiting Petroleum and other companies. The Sierra Club has used Title V suits to try to block permitting for a dozen coal-fired electric plants.

"The battle over fracking upstream is over, so the focus is on the blood vessels now," says lawyer Michael Krancer, a partner at Blank Rome and former Pennsylvania Secretary of Environmental Protection. "The Achilles' heel is compressor stations and pipelines. It's no longer a battle about what's happening drilling-wise."

What's more, the EPA is still adding additional levels of permitting. It recently pushed through the so-called Waters of the United States Rule, which basically expands the bodies of water under its jurisdiction from 3.5 million miles to 8.1 million miles, by including streams and ponds that may overflow. The effect of the rule will be to slow projects down while developers figure out complex hydrology.

That's music to the ears of Tonya Bonitatibus, executive director of Savannah Riverkeeper, who says she is fighting to block Kinder Morgan from developing a natural gas pipeline in Georgia in part because it crosses wetlands and rivers. "When they go to put this pipeline through, what they actually want to do is build a giant trench with a road on top of it. When you cut that bog or swamp in half like that, you essentially kill it. Even if not a spill, there's still damage."

Richard Kinder, the billionaire cofounder of Kinder Morgan, insists he's willing to work with local activists to find a way to make the project work and points out that it will increase environmental safety by getting millions of gallons of jet fuel and diesel off the region's highways each year, where it is now being shipped by truck. "This will make that whole area more competitive," he says. "That's exciting."

Bonitatibus insists she's also open to a compromise but doubts it will happen, citing the company's "arrogance." "They would probably be further along if they worked within our culture," she says, arrogantly. "There are ways to go about it. Can they afford it? Probably not."

Can *we* afford it? It's a question 21st-century America needs to start asking itself. And soon. F

With additional reporting by Corinne Jurney.

Treasure Islands

Japanese billionaire Soichiro Fukutake has created a surreal archipelago of art, including an underground museum of Monets and a luxury hotel designed by Tadao Ando.

BY SUSAN ADAMS

For Japanese billionaire Soichiro Fukutake, the best place to view contemporary art is not a white-walled museum in New York, Paris or even Tokyo. Rather it's an archipelago in Japan's Seto Inland Sea, where he has transformed what were dying industrial waste dumps into a glamorous destination for adventurous art lovers and high-profile collectors like French luxury-goods titan François Pinault, Greek industrial magnate Dakis Joannou and Los Angeles arts patron Eli Broad. "Most urban museums are just places for hanging beautiful art," says the 69-year-old Fukutake. "The art, the building and the environment should work together to wake up the viewer."

Even if you wake up at 7 a.m. at Benesse House—the $400-a-night hotel where many of Fukutake's treasures are housed—you can indulge in an experience unique among the world's finest resorts. With no guards or velvet ropes to block access, there is a museumful of blue-chip works to be explored, including a 1962 Giacometti bronze, a David Hockney swimming pool painting, a white-washed Jasper Johns alphabet work and, surrounded by a sloping walkway, a 10-foot-tall neon-light sculpture by Venice Biennale winner Bruce Nauman, flashing provocative aphorisms in red, pink, blue and yellow: "Feel and Die," "Fear and Live ... ."

One of Fukutake's goals for the islands

Artists in Wonderland: clockwise from above, an installation at the Lee Ufan Museum; the view from underground at the Teshima Art Museum; the Benesse House Park; and Yayoi Kasuma's "Pumpkin" on Naoshima.

is to see that his collection lives beyond his lifetime. "Through the project I'm searching for eternity," he explains. "I want the art to be significant in any age." To build his legacy, he has collaborated with Pritzker Prize-winning architect Tadao Ando, known for his minimalist sensibility, improbable angles and liberal use of smooth, unpainted concrete. Together they have created a complex of elegantly designed structures, three of them carved into the hills of Naoshima Island,

FROM TOP: TADASU YAMAMOTO; SHIGEO ANZAI; OSAMU WATANABE

MAIN PHOTO: NOBORU MORIKAWA

a 5-square-mile outpost of rolling terrain, small villages and stunning views of the sea.

Ando's most striking structure, the Chichu Art Museum (*chichu* means "underground" in Japanese), is almost entirely below the earth but doesn't feel that way, with its two courtyards open to the sky and the elements, surrounded by slanted walkways, and skylights in three of the larger rooms. The Chichu houses work by just three artists, including five late paintings from Claude Monet's water lily series. Before entering the space, visitors must don soft white slippers to avoid soiling the luminous white floor tiles made from Carrara marble. "Many people say that Naoshima is better than l'Orangerie," says Fukutake. "In Naoshima it's a spiritual experience."

Fukutake made his estimated $1.02 billion fortune through his share in Benesse Holdings, a company his late father founded in 1955 as Fukutake Publishing. After his father died of a heart attack in 1986, he changed the

name to Benesse, from the Latin words for "well-being." Today Benesse owns the Berlitz language schools, correspondence courses and 275 nursing homes throughout Japan. Under Fukutake's direction, first as chairman and now as executive advisor, Benesse funnels 5% of company shares into the Fukutake Foundation, which supports the art site. He has also invested $240 million of his family fortune into the project.

While Tokyo would be the obvious location for such a museum, Fukutake had come to see the city as a destructive center of money and stress. "Tokyo is chaos and madness, like New York," he says. "There is too much—too much entertainment, too many products, too many people." Better to appreciate art surrounded by the natural world.

In addition to three Ando-designed museums and the museum-cum-hotel, Fukutake has commissioned 20 site-specific works. In 1995 Benesse also established a prize at the Venice Biennale for an artist it would fund to produce a piece for the islands. The first one, by Chinese artist Cai Guo-Qiang, consists of a series of more than 20 rocks placed according to principles of feng shui on a grassy area surrounded by trees just off the beach. The artist set a hot tub in the middle of the work, and hotel guests can make arrangements to soak there while gazing out at the sea.

To determine the best spots for the outdoor pieces and museums, Fukutake flies his private helicopter over Naoshima and two nearby islands, Teshima and Inujima. Finding the works of art scattered between the hotel and the Chichu museum a half-mile up the hill can feel like a scavenger hunt. One piece, by Japanese artist Tsuyoshi Ozawa, is a series of 88 Buddhas in bas-relief on bits of industrial slag. It lies across a pond in an easily missed curve in the road.

While building the museums on Naoshima, including one devoted to the work of Korean-born minimalist Lee Ufan, Fukutake came up with the idea of transforming abandoned homes into works of art. Visitors can take a shuttle bus five minutes from the hotel into the charming village of Honmura, where there are seven so-called "art house projects." The most striking is a collaboration between Ando, who designed the structure, and James Turrell, the 72-year-old American artist who creates works using light and optical illusions to startling effect.

On Teshima, a beautiful, hilly expanse where Fukutake restored the rice paddies that cover the hillsides, there is another extraordinary museum, unlike anything I have seen. Shaped like a giant teardrop and made out of white cement, it's nestled in a shallow valley. Two ovals cut into the ceiling let rain fall inside. Visitors must remove their shoes, and attendants admonish them not to get their feet wet. But what appear to be naturally occurring puddles turn out to be the result of tiny underground holes spouting water that then flows down the highly polished floor, looking like glowing pools of mercury. Standing under the sloping roof, I felt like I was in an open-air spaceship moving through a beautiful galaxy of abundant water.

Though the Benesse Art Site Naoshima is remote—more than six hours from Tokyo, including three and a half hours on the wonderful Shinkansen bullet train, two different local trains and a 20-minute ferry ride from the sleepy town of Uno—the hotel, which consists of the 10-room museum and three annexes with an additional 55 rooms, was almost fully booked in early June.

While both Benesse Holdings and the Fukutake Foundation administer and fund aspects of the project, all major decisions flow through Fukutake. Since 2010 the foundation has collaborated with the local government to produce the Setouchi Triennale, where temporary exhibits are scattered around a dozen islands. The next festival will start in March 2016.

But these islands are not a home for Fukutake. Because of his love of nature, he moved from Japan to New Zealand five and a half years ago. He keeps two houses there, in Auckland and on the south island, and flies his two-seater plane between the two. But he spends a quarter of the year in Japan, as much of it as possible in his artful archipelago. "I want people from the big city to envy this place," he says. "I want to create a new country in Japan." *

FINAL THOUGHT

* *"You know it's art when the check clears."* —**ANDY WARHOL**

ARTFUL TRAVELING

Three prime destinations for adventurous art lovers.

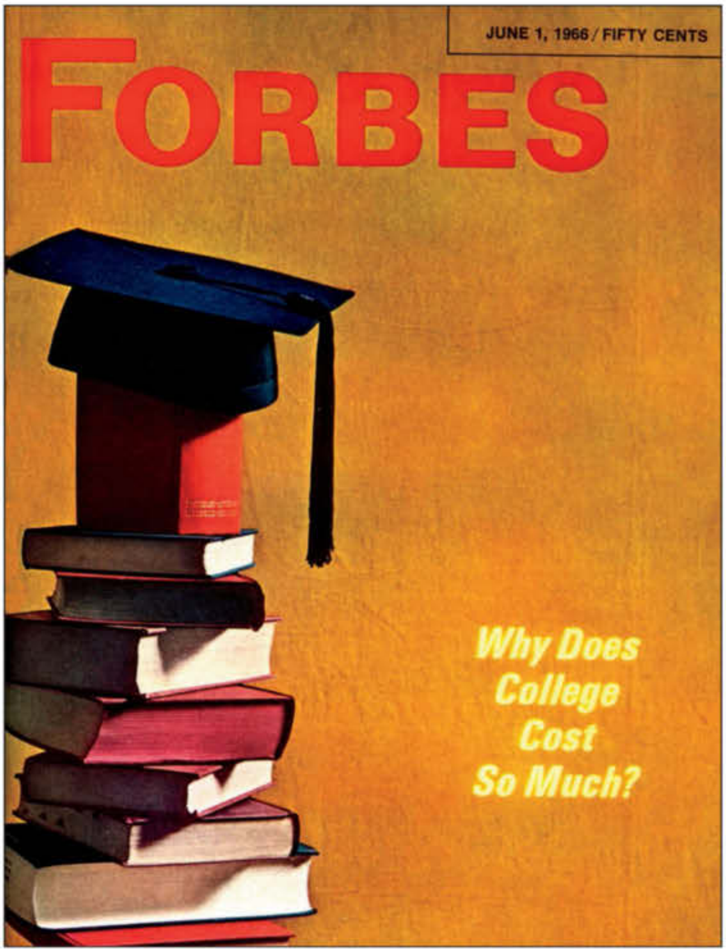
ZABLUDOWICZ COLLECTION SARVISALO, FINLAND
Naoshima inspired London collectors Anita and Poju Zabludowicz to convert their island property into a retreat where artists create site-specific works.

INHOTIM BRUMANDINHO, BRAZIL
More than 200 works of contemporary art are displayed on 345 acres of a botanical garden owned by mining magnate Bernardo Paz.


INHOTIM

CHINATI FOUNDATION MARFA, TEX.
The late minimalist Donald Judd worked on this former Army base in the high desert that now displays pieces by a dozen artists in a series of indoor and outdoor spaces.

FINAL THOUGHT
"To become an earner, be a learner."
—B.C. FORBES



"Why does college cost so much? It's a national headache, but more to the point it's a very personal one for a large proportion of FORBES readers, those with children and grandchildren to educate. As our article shows, it now costs at least $4,000 a year to keep an offspring in one of the better-known Ivy League schools; at least $2,000 in the big state universities."
—FROM THE JUNE 1, 1966 ISSUE OF FORBES

OTHER THOUGHTS FROM THAT ISSUE:

ON MEETING RFK *"Senator Kennedy? In person he doesn't come across at all in the image of the hard-headed, ruthless political Svengali who did the backroom knuckle work when his brother was President. He seems shy, almost diffident. Despite what the 'public image' may suggest, he is a pleasant, delightful man to be with."*

GUNS AND BUTTER *"Vice President Humphrey believes the U.S. should stockpile food the way it does strategic materials. Says the Vice President: 'Food is so vital, it may be the most important diplomatic weapon we have.'"*

ON EDUCATION

"The roots of education are bitter, but the fruit is sweet." **—ARISTOTLE**

"I read Shakespeare and the Bible and I can shoot dice. That's what I call a liberal education." **—TALLULAH BANKHEAD**

"One of the biggest troubles of colleges is there are too many distractions, too much panty raiding, fraternities and boola-boola and all of that." **—MALCOLM X**

"A university is just a group of buildings gathered around a library." **—SHELBY FOOTE**

"Give instruction to a wise man and he will be still wiser; teach a just man, and he will increase in learning." **—PROVERBS 9:9**

"Everybody who is incapable of learning has taken to teaching." **—OSCAR WILDE**

"I pay the schoolmaster, but 'tis the schoolboys who educate my son." **—RALPH WALDO EMERSON**

"That's what learning is: You suddenly understand something you've understood all your life, but in a new way." **—DORIS LESSING**

"Education is what most people receive, many pass on and few actually have." **—KARL KRAUS**

"Upon the education of the people of this country the fate of this country depends." **—BENJAMIN DISRAELI**

"Try to learn something about everything and everything about something." **—T.H. HUXLEY**

"Education: that which discloses to the wise and disguises from the foolish their lack of understanding." **—AMBROSE BIERCE**

SOURCES: LIVES AND OPINIONS OF EMINENT PHILOSOPHERS, BY DIOGENES LAERTIUS; GOODREADS.COM; THE CYNIC'S WORD BOOK, BY AMBROSE BIERCE; THE TIMES BOOK OF QUOTATIONS; JOURNALS, BY RALPH WALDO EMERSON; PRO DOMO ET MUNDO, BY KARL KRAUS; THE AUTOBIOGRAPHY OF MALCOLM X.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